

COAL AGE

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Bituminous Coal in 1920

Production 21 Per Cent Greater Than in 1919—Distribution Considered Geographically and in Regard to Classes of Customers—Consumption Dependent on Industrial Conditions and the Weather—Prices Reach New High Records

PRODUCTION of bituminous coal in the United States in 1920 is estimated at 556,500,000 net tons, an increase compared with 1919 of 98,000,000 tons, or 21 per cent. Production of anthracite is estimated at 89,000,000 net tons, an increase of 1,000,000 tons, or 1.1 per cent. The production of bituminous coal has been exceeded in but one previous year, 1918, when the total output was 579,000,000 tons. The best pre-war year was 1913, in which 478,000,000 net tons of bituminous coal were produced. In 1917, when the production was 551,000,000 tons, the third highest record was attained.

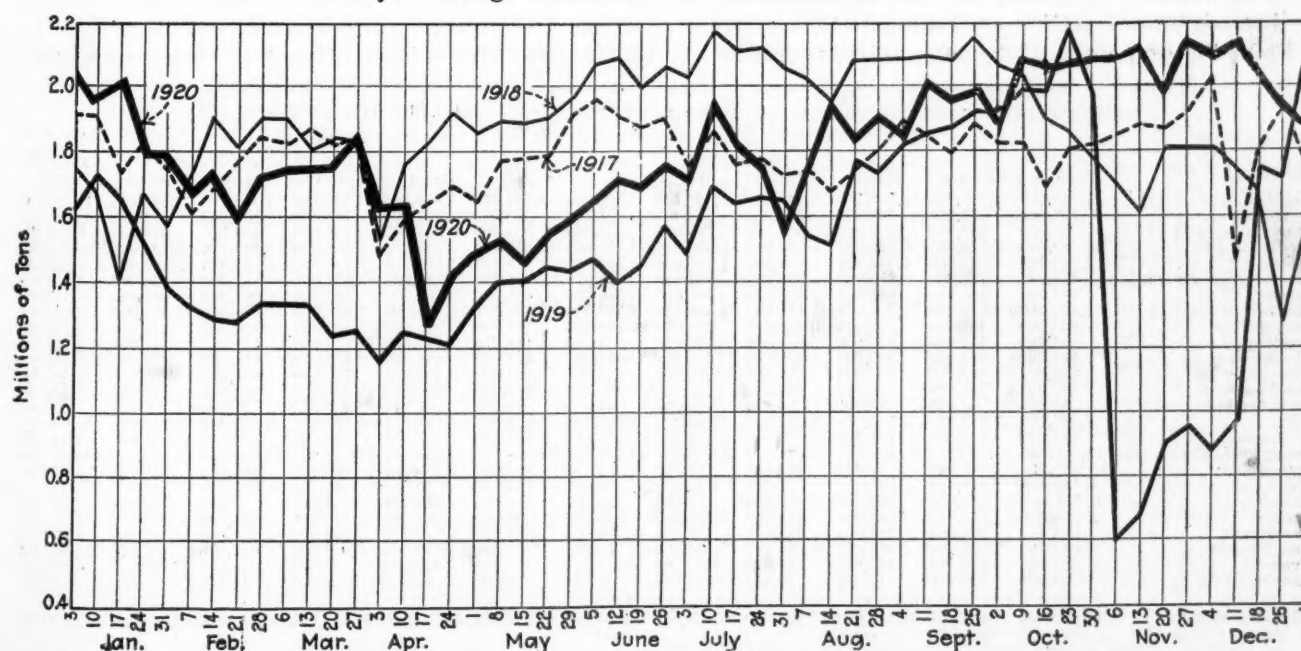
In point of value at the mine the year 1920 has set a new record. Official figures of the value of the bituminous coal produced in 1918 are \$1,491,000,000, compared with which it is conservatively estimated that the smaller production in 1920 netted the producers approximately \$2,225,000,000. Of the increase in value at the mine mouth of \$734,000,000 it is estimated that the miners and mine laborers received \$234,000,000 as wages and bonuses.

Although production of bituminous coal in the United

States in 1920 increased 21 per cent over 1919, all producing fields did not share equally in the gain. Considering the coal fields by groups, which is all that the preliminary statistics will permit at this time, we find that the Middle West—Illinois, Indiana and western Kentucky—made the largest gain, 38 per cent. The increase in quantity was 36,400,000 tons, exceeded only by that in the middle and northern Appalachian territory. This large region, comprising the coal fields of Pennsylvania, Ohio, West Virginia, Virginia, Maryland, Michigan and eastern Kentucky, produced in 1920 332,148,000 net tons of bituminous coal, a gain over the previous year of 43,837,000 tons, or 15 per cent.

The Southern states of Tennessee and Alabama produced 25,178,000 tons in 1920, compared with 20,380,000 tons in 1919, an increase of 22.5 per cent. The Western Interior Region, comprising the fields from Iowa to Texas, had an estimated output of 29,707,000 net tons, a gain over the previous year of 27 per cent. In the far West the Rocky Mountain region, including the fields of Montana, Wyoming, Colorado, New Mexico and Utah, registered a gain of 22.6 per cent over 1919 and Wash-

Daily Average Production of Bituminous Coal*



*From weekly report of Geological Survey.

ington had a small increase of 234,000 tons, or less than 1 per cent.

Illinois, according to the preliminary figures of the Geological Survey, in 1920 reached the goal for which she has been striving for years, namely to replace West Virginia as the second largest coal-producing state in the Union. West Virginia's output increased only about 10,000,000 net tons over 1919, while Illinois gained nearly 25,000,000 tons. Although it is admittedly difficult to arrive at preliminary estimates of production by states to the same degree of accuracy as for the country as a whole, it appears that the indicated lead of more than 7,000,000 tons held by Illinois in the first eleven months of 1920 warrants the conclusion that West Virginia will now occupy third position.

The middle and northern Appalachian region fell short by 20,000,000 tons, or nearly 6 per cent of the high mark set in the war year of 1918. Illinois, Indiana, and western Kentucky had a production in 1920 equal to that in 1918, and the South and West fell little short of reaching the war maximum. As was so clearly demonstrated in the war years, it is in the immense coal fields of the East that greatest difficulty is experienced in meeting large demands for increased production.

PRODUCTION SHOWS MARKET FLUCTUATION

The rate of bituminous coal production in 1920 may be roughly described as having dropped from the high point of the first half of the year, attained the first week of January, to the low point of the year, in the middle of April, and from then on until the holiday season at the end of 1920 to have climbed upward, with many backslidings on the way. Until after the middle of the year the rate of output in 1920 was about midway between that of 1919 below and that of the war years, 1917, 1918, above. From Oct. 1 on the rate of production was, with the exception of the highest of all records, in the week preceding the miners' strike in November, 1919, greater than for the same period in any other year for which records are available. For the last thirteen weeks of 1920 production averaged well above 12,000,000 net tons a week, a record of sustained output equalled only during the summer and early fall of 1918, when every energy of the country seemed to be directed toward getting out coal and still more coal.

From the first week of January until the middle of

December car shortage was the principal factor limiting production of bituminous coal. That is to say, each week of this period the demand for coal was in excess of the ability of the railroads to carry it from the mines. To a limited extent labor trouble adversely affected output, particularly in Alabama and West Virginia, where strikes were in effect throughout the greater part of the time, and in Illinois, Indiana, Ohio and central Pennsylvania, where there were temporary losses because of local strikes during the summer. These strikes, however, cannot be said to have decreased the production of the country as a whole, for when the mines at which the men were on strike did not operate, the cars were in use elsewhere. Likewise the mines that reported no market as a cause of non-operation in the last half of December were those properties which, because of high cost of production, were not in position to compete with lower-cost operations after prices fell to low levels. It is not at all unlikely that the total output was as great as it would have been in any event, despite the closing of these few properties.

An important cause of the failure of the fields in the East to attain as great an increase in 1920 as was realized by the country as a whole was the dislocation of open-top cars at the beginning of the year. During the miners' strike in November and December, 1919, thousands of open-top cars belonging to the roads serving the coal fields in the East were sent under load to the West, where complete stoppage of mining had taken place. These cars were many months in reaching home lines and in the first half of the year their absence seriously affected production in the East.

Price was an important stimulus to production in 1920. The effect on production of the extraordinary prices that obtained throughout the greater part of the year is difficult to appraise. The high prices were the direct cause of the opening of many small and usually inefficient mines—inefficient both in the use of labor and of transportation. The same or a greater output could doubtless have been obtained from a smaller number of mines working with the same total number of men and railroad cars. But it is equally evident that had it not been for the high prices there would not have been the nationwide interest in efforts to make the supply of transportation carry more coal. It was recognized by all that the cure for high prices was more tons of coal.

PRODUCTION OF BITUMINOUS COAL BY MONTHS, JANUARY TO NOVEMBER, 1920, IN NET TONS*

State	January	February	March	April	May	June	July	August	September	October	November	Total First Eleven Months, 1920
Alabama.....	1,740,000	1,409,000	1,565,000	1,419,000	1,520,000	1,540,000	1,594,000	1,484,000	1,359,000	1,568,000	1,595,000	16,792,000
Arkansas.....	221,000	179,000	204,000	151,000	176,000	197,000	209,000	207,000	188,000	210,000	212,000	2,153,000
Colorado.....	725,000	843,000	595,000	667,000	713,000	851,000	851,000	885,000	854,000	869,000	955,000	8,807,000
Illinois.....	8,760,000	7,575,000	8,721,000	6,580,000	6,520,000	7,866,000	6,435,000	7,734,000	8,074,000	9,009,000	9,104,000	85,737,000
Indiana.....	2,540,000	1,843,000	2,052,000	1,436,000	1,464,000	2,264,000	1,788,000	1,880,000	2,395,000	2,622,000	2,652,000	23,577,000
Iowa.....	877,000	787,000	850,000	731,000	694,000	775,000	650,000	685,000	688,000	817,000	806,000	8,360,000
Kansas.....	699,000	560,000	638,000	502,000	559,000	560,000	460,000	367,000	532,000	631,000	606,000	6,113,000
Kentucky.....	2,822,000	2,414,000	2,572,000	2,172,000	2,449,000	2,531,000	2,939,000	2,975,000	2,826,000	2,851,000	3,096,000	29,647,000
Maryland.....	301,000	217,000	366,000	310,000	304,000	290,000	364,000	375,000	395,000	292,000	393,000	3,706,000
Michigan.....	154,000	118,000	122,000	124,000	82,000	128,000	115,000	115,000	115,000	117,000	114,000	1,303,000
Missouri.....	564,000	484,000	547,000	423,000	469,000	449,000	457,000	438,000	478,000	485,000	463,000	5,258,000
Montana.....	506,000	405,000	367,000	358,000	285,000	336,000	361,000	453,000	375,000	457,000	486,000	4,387,000
New Mexico.....	317,000	275,000	314,000	258,000	251,000	280,000	282,000	297,000	297,000	302,000	323,000	3,196,000
North Dakota.....	84,000	63,000	58,000	54,000	40,000	44,000	49,000	67,000	62,000	74,000	95,000	691,000
Ohio.....	3,641,000	2,962,000	3,541,000	2,932,000	3,306,000	3,920,000	3,827,000	4,124,000	4,182,000	4,268,000	4,231,000	40,933,000
Oklahoma.....	405,000	338,000	327,000	314,000	315,000	316,000	324,000	337,000	302,000	338,000	357,000	3,673,000
Pennsylvania (bituminous).....	13,761,000	11,323,000	13,435,000	11,019,000	11,050,000	13,120,000	13,676,000	15,501,000	15,042,000	15,842,000	15,052,000	148,801,000
Tennessee.....	639,000	488,000	551,000	487,000	517,000	563,000	558,000	553,000	490,000	586,000	593,000	6,024,000
Texas.....	149,000	110,000	104,000	121,000	126,000	140,000	142,000	139,000	100,000	113,000	118,000	1,362,000
Utah.....	271,000	473,000	482,000	319,000	375,000	480,000	517,000	479,000	449,000	455,000	516,000	5,291,000
Virginia.....	990,000	716,000	882,000	829,000	822,000	835,000	694,000	682,000	724,000	743,000	720,000	8,635,000
Washington.....	369,000	304,000	334,000	294,000	252,000	298,000	358,000	267,000	294,000	354,000	322,000	3,346,000
West Virginia.....	7,047,000	5,523,000	7,083,000	6,190,000	6,304,000	6,880,000	7,652,000	8,112,000	8,003,000	8,027,000	7,657,000	78,476,000
Wyoming.....	962,000	819,000	815,000	681,000	702,000	731,000	818,000	909,000	939,000	1,002,000	982,000	9,359,000
Other states (a).....	11,000	10,000	12,000	10,000	11,000	11,000	10,000	10,000	9,000	11,000	11,000	115,000
Total bituminous.....	48,555,000	39,419,000	46,537,000	38,381,000	39,556,000	45,404,000	45,030,000	49,081,000	49,172,000	52,143,000	51,459,000	505,742,000

*Estimates by U. S. Geological Survey; subject to revision.

(a) Includes California, Georgia, Idaho, North Carolina, Oregon and South Dakota.

Had it not been for the evidence of tremendous demand afforded by the high price of coal, it is doubtful whether the Interstate Commerce Commission would have given absolute priority to coal in the use of that transportation.

Thousands of new coal mines were opened in 1920, but for the most part they have again closed, as the price has gone down. How much of the tonnage that was loaded and that figures in the statistics as coal actually was slate and dirt will never be known, but, as in 1917 and 1918, it is certain that the percentage was appreciable and that the total transportation wasted in hauling rock was a national loss. To this the smaller new operations were the heaviest contributors because they were in most instances "outcrop" mines and were not equipped to clean their product.

Of the service orders of the Interstate Commerce Commission, those relocating open-top cars—bringing the wanderers in the West back home in the East—ordering increased shipments to the Lakes and, of greater importance, those giving coal preferential use of open-top cars, were potent in increasing the production of soft coal. The Lake priority orders increased production because they provided for a shuttle movement between the mines and Lake Erie ports and thereby decreased car detention and provided potentially more cars for loading coal.

DISTRIBUTION

Four different conditions affecting the distribution of bituminous coal may be roughly assigned to the four quarters of 1920. The first quarter was devoted to filling the gaps in supply left by the miners' strike of the previous year, the second quarter saw tremendous demand for free coal and every possible ton going to the highest bidder, followed by three months in which prices and distribution were brought under control, while finally in the last quarter of the year, supply having caught up with demand and fears of a shortage having been allayed, a pronounced drop in prices and to a small extent in production took place.

It is of primary importance in considering the subject of distribution of coal to have clearly in mind the difference between distribution as to sections of the country—that is, geographic distribution—and among classes of consumers—use distribution. The problems of furnishing coal to New England and the Northwest are examples of the first class and the problem of getting coal to the railroads and public utilities represents the second class. Under the system of control exercised by the Fuel Administration in 1918 and emulated by the Railroad Administration during the strike of 1919, the problem of geographic control of distribution was effected by the zones and distribution in regard to users was controlled by the priority lists.

Federal control of coal in 1920, and of course there

was such control, was exercised by the Interstate Commerce Commission through its power over transportation and coal cars under the Transportation Act of 1920. A study of the service orders of the commission will show how these two kinds of distribution were affected. To force coal to New England and to the Lakes for the Northwest, orders were issued requiring minimum deliveries or consignments each day by the operators to these sections and enforcing the mandate by embargoing shipments from the mines until the respective minima had been fulfilled. In effect, the first cars to be loaded with coal at each mine in the fields affected were each day assigned either to the Lakes or to Tidewater for New England. The results sought were in each instance promptly attained and the plan worked after the first few weeks of tryout.

PARTICULAR ATTENTION TO SPECIAL CLASSES

However, to get coal to a special class of users in all parts of the country made necessary some other method of control. Whereas the coal forced to New England was for any and all consumers in that section, there were parts of the country where no such broad action was considered necessary but in which there were special users of coal who seemed to require particular attention. The most notable example of this were the public utilities in New York and other cities on the Atlantic coast.

The problem here was to pick out from current production additional and special supplies for particular consumers without attempting to increase the total movement to that section of the country. This was effected by extending to public utilities the privilege of assigned cars, already a prerequisite of the railroads for obtaining their coal. Service orders were promulgated by the Interstate Commerce Commission making provision for this, the method in detail requiring that utilities in need of coal for current consumption and unable to otherwise procure it, apply to the railroads and finally to the coal shippers for cars and coal assigned for this specific use. Because the lack of cars in which to load the coal was the only hindrance to getting all the coal required, it is patent that having cars assigned provided sufficient incentive to shippers to give coal to those to whom such cars were given.

ASSIGNED-CAR PRIVILEGE ABUSED

The privilege of assigned cars for public utilities and other public and semi-public consumers was withdrawn before the end of the season, mainly, it is understood, because of abuses in the practice. The plan was not so successful as that adopted for regional distribution and was opposed by the coal operators on general principles and was favored just as much by those who were the beneficiaries.

The West, Middle West and the South have demon-

BITUMINOUS COAL AND LIGNITE PRODUCED IN THE UNITED STATES, 1916-1918, WITH ESTIMATES FOR 1919 AND 1920, BY GROUPS OF STATES

	(In Thousand of Net Tons)					—Increase 1920—	
	1916	1917	1918	1919	1920	Tons	Per Cent
Pennsylvania, Maryland, West Virginia, Virginia, Eastern Kentucky, Ohio and Michigan.....	324,493	333,416	351,342	288,250	332,148	43,898	15.2
Tennessee, Alabama.....	24,223	26,262	26,016	20,380	25,178	4,798	22.5
Illinois, Indiana, Western Kentucky.....	94,110	122,976	130,791	94,600	131,009	36,409	38.5
North Dakota, South Dakota, Iowa, Missouri, Kansas, Oklahoma, Arkansas and Texas.....	27,119	31,507	31,451	23,340	29,707	6,367	27.3
Colorado, Montana, Wyoming, Utah and New Mexico.....	29,388	33,411	35,539	28,240	34,634	6,394	22.6
Washington.....	3,039	4,010	4,082	3,100	3,324	224	0.8
Total.....	502,282	551,582	579,221	458,000	556,000	98,000	21.0

strated through the troublous past four years an ability, both as regards mine capacity and railroads, to take care of their normal markets. Any large dislocation in production and distribution, excepting of course those arising from major strikes of labor, comes in the coal fields of the middle and northern Appalachian regions—that is, from southern West Virginia north to and including Ohio and Pennsylvania. The coal fields in this area, from which comes nearly three-quarters of the total bituminous coal output of the country, not only are the source of supply for markets immediately adjacent, as in Pennsylvania and New York on the east and Ohio on the west, but these same fields must also meet the requirements of the Northwest, to which they ship via the Great Lakes; New England, to which coal is shipped all rail from Pennsylvania fields and by rail and water from fields further south, and as well the requirements of ocean shipping for bunkers and foreign countries for cargo coal. In other words, the largest coal fields are large exporters of coal—to New England by rail, to the Northwest by way of the Lakes and to Atlantic Tidewater ports for a number of uses. In addition to these three major movements, there are insistent demands for coal from these fields for consumers in Michigan, Ohio, Indiana and, closer by, from Virginia.

The variety and magnitude of the demands on the coal fields of the northeastern United States make it plain why trouble is first encountered there and why so much effort was necessarily expended on this area in 1920. It was shown early in the summer that the deficiency of production in the fields from West Virginia north was at least 5,000,000 tons per month and that no measure of arbitrary distribution would meet the situation of impending shortage unless production in these fields was increased, and increased without materially decreasing that in other fields. How that was accomplished is illustrated by the following figures:

ESTIMATED PRODUCTION AND DISTRIBUTION OF BITUMINOUS COAL BY MIDDLE AND NORTHERN APPALACHIAN FIELDS, BY MONTHS, JANUARY TO NOVEMBER, 1920
(In Net Tons)

(In Net Tons)

Month	Production	Shipped to Lake Erie Ports	Shipped to Tidewater	Shipped to New England and Canada by Rail and Used as Railroad Fuel in East	Balance for Consumption in Immediately Adjacent All-Rail Markets and for Coke Making	Per Cent of Total Output Available for Local Markets
January.....	27,754,000	3,185,000	5,771,000	18,798,000	68.0	
February.....	22,468,000	2,899,000	5,663,400	13,905,600	62.0	
March.....	24,727,000	3,965,000	5,972,000	14,790,000	59.5	
April.....	22,852,000	377,500	4,056,000	5,958,000	12,460,500	54.5
May.....	20,510,000	1,272,000	4,436,000	5,935,500	8,865,000	43.0
June.....	26,869,000	2,221,000	4,699,000	5,989,000	13,959,800	52.0
July.....	28,288,000	2,857,500	4,915,000	6,747,500	13,768,000	48.6
August.....	30,893,000	4,601,700	5,352,000	6,701,800	14,237,500	46.0
September.....	30,345,000	4,138,500	5,447,000	6,207,000	14,552,500	48.0
October.....	31,189,000	4,693,800	5,786,000	6,804,000	13,905,200	45.0
November...	30,268,000	3,504,100	4,784,000	6,705,000	15,274,900	50.0
Totals for 11 mos..	296,163,000	23,667,000	49,524,000	68,454,200	154,517,800	52.0

New England and the Northwest each had their coal problems in 1920, and for each a solution was found before the depression in business late in the year removed the great demand for fuel in these sections. Elsewhere in this issue both are fully and authoritatively discussed and but passing mention of them will be made in this review.

New England guessed wrong at the beginning of the year and had not definite and comprehensive steps been

taken in her behalf by the Federal Government she would have had difficulty in getting the coal required without paying very highly for it. Consumers in New England have much to learn about the shifts that have taken place in the coal trade in the last four years, and until they approach their problem with more open minds and fuller recognition of their changed relations to the rest of the world in respect to bituminous coal, they will have trouble.

The Northwest, in particular the dock operators, is in a peculiar position in that a considerable portion of the coal used in that large section comprising the States of Minnesota, Wisconsin, North Dakota and parts of South Dakota and Iowa must be purchased and moved in the summer time, stored on the docks at the head of the Lakes and doled out during the cold weather. In the past, prior to the war, coal was cheapest in the summer time and the operators of the docks always were able to obtain their winter's supply, usually more than 20,000,000 tons, at very reasonable prices and could sell it to their customers at prices netting them a nice profit.

When coal reaches its highest price in the summer time, as in 1917 and 1920, however, the dock men are at a disadvantage. They pay high prices for what they get, and the following winter, when the rest of the country is enjoying lower prices, they must either pass on what they have in storage at high prices or accept a loss. As their customers have no other adequate source of supply, it can be assumed that they voluntarily pocket no loss.

The theory on which the Lake trade has been built up was overturned in 1920. For instance, there is the matter of contracts. It does not appear to have been the custom for those who ship coal to lower Lake Erie ports to enter into even the usual form of coal contract with the dock buyers, because it usually has been so easy to obtain coal in the summer months for the Lake trade. The Lake outlet in the off season of summer enjoyed by Eastern operators has been observed with envious eyes by coal producers in the Middle West. Simple agreements to ship "what I may have available," at a price to be determined later, were this year magnified by some of the Northwest buyers and the Calder committee to read as hard-and-fast contracts and there has been much acrimonious debate because the shippers did not so construe them during the past season.

BUYERS ENTER MARKET EARLY THIS YEAR

That those who are responsible for getting the coal for the docks are aware of this is evidenced by the fact that this year they are in the coal fields six weeks earlier than ever before, taking advantage of the present low prices, making, or rather trying to make, contracts for cargo coal for the Northwest for the season of 1921.

All records for shipments of soft coal to the Atlantic Tidewater ports were broken in 1920. Compared with the previous maximum of nearly 43,000,000 net tons delivered over the North Atlantic piers in 1918, the figures for the first eleven months of 1920 exceed 49,500,000 net tons and the total for the year is estimated at more than 53,000,000 tons. In the five months July to November inclusive Tidewater dumping at these ports were at the rate of 63,000,000 net tons per year, and in October it was at the rate of more than 69,000,000 tons. For the first time export cargo exceeded every other item with a total in eleven months of more than 20,000,000 net tons. Exports off shore in 1917 were 5,500,000

net tons, or about one-fourth what they were in 1920. In 1918, because largely restricted, exports by water were but 3,700,000 tons, and in 1919 the record was the highest attained to that date—8,292,000 net tons. In the five months July to November inclusive, 1920, exports from the four North Atlantic ports were at the rate of 28,000,000 net tons per annum and in October at the rate of nearly 35,000,000 tons. Hampton Roads is the most important loading port for export cargo coal and in the period from the beginning of May to the end of the year 1920 the daily average was 50,000 net tons or at the rate of 1,250,000 tons per month or 15,000,000 tons a year.

TIDEWATER BITUMINOUS COAL SHIPMENTS AT CHARLESTON, HAMPTON ROADS, BALTIMORE, PHILADELPHIA AND NEW YORK, ELEVEN MONTHS ENDED NOV. 30, 1920
(In Net Tons)

Months	Coastwise to New England	Exports	All Others	Totals
January.....	804,000	897,000	1,484,000	3,185,000
February.....	793,000	718,000	1,388,000	2,899,000
March.....	954,000	1,033,000	1,978,000	3,965,000
April.....	717,000	1,903,000	1,436,000	4,056,000
May.....	776,000	1,942,000	1,718,000	4,436,000
June.....	772,000	2,175,000	1,752,000	4,699,000
July.....	1,006,000	2,081,000	1,828,000	4,915,000
August.....	1,048,000	2,295,000	2,009,000	5,352,000
September.....	1,108,000	2,332,000	2,007,000	5,447,000
October.....	889,000	2,911,000	1,986,000	5,786,000
November.....	792,000	2,063,000	1,929,000	4,784,000
Total for 11 months....	9,659,000	20,350,000	19,515,000	49,524,000
1919.....	8,385,382	8,292,414	20,384,120	37,061,817
1918.....	15,248,129	3,740,750	23,919,641	42,908,522
1917.....	12,268,470	5,515,634	20,484,862	38,268,966

CONSUMPTION

Rate of consumption of coal is the important factor in the situation over which the coal operators and the railroads have no control. The railroads are the largest individual consumers of coal but their consumption is proportional to the freight that is offered. The rate at which coal is burned varies with the relative prosperity of industry and with the weather. Demand, as differing from consumption, is consumption plus or minus the quantity of coal that is put into or taken from consumers' storage and plus the difference between exports and imports.

Production in the period of a year is an approximate, rough measure of demand. To determine the quantity consumed in any period it is necessary to know also the extent of stocks at the beginning and end of the period. On the basis of such data as are available it is estimated that the consumption of bituminous coal in 1920 was 490,000,000 net tons, compared with 480,000,000 tons consumed in 1919, 525,000,000 tons in 1918, 502,000,000 tons in 1917 and 494,500,000 tons in 1916—that is, in respect of coal burned in the United States it appears that 1920 was about on a par with 1916. The difference in production in the two years, about 54,000,000 tons, is accounted for in the greater exports last year and the fact that in 1916 stocks were 11,000,000 tons less at the end of the year than at the beginning, whereas in 1920 about 21,000,000 tons were added to consumers' storage. In 1916 total exports both by land and water less imports were, in round numbers, 19,000,000 net tons, compared with more than 39,000,000 in 1920.

PRICES

New high records in spot prices for both bituminous coal and anthracite were set in 1920. Emerging from a severe winter following the six-week miners' strike, during which production was cut more than two-thirds,

the stock piles of the country were the lowest of any record. No sooner had the prices fixed by the government been lifted than consumers began to bid strenuously for coal, and under the impulse of this competitive bidding prices rose from an average of \$2.50 to \$9.50 in the middle of August. In this issue of *Coal Age* are given in graphic form the curves of spot prices of bituminous coal in eighteen fields. The range is considerable but the weighted average in the second week of August, when most prices were the highest, was \$9.56 per net ton at the mines for run of mine. The weighted average spot price from April to the end of the year was \$6.30. The weighted average contract price, considering not only those contracts dated in 1920 but those of the earlier date, is estimated at \$3.25. If it be assumed that one-fourth of the output was sold at the average spot price and that the remainder moved on the average contract figure it is found that the average realization was \$4 per net ton at the mines. The total value of the soft coal produced in 1920, based on this assumption, was \$2,225,000,000, compared with \$1,491,000,000 for the 579,000,000 tons produced in 1918. This represents an increase in value at the mines over the war year of \$734,000,000, of which mine labor received in increased wages and bonuses not less than \$234,000,000 and the producers \$500,000,000.

In the accompanying diagram the current quotations on spot sales as reported in *Coal Age* from week to week in 1920 are reduced to one figure for all fields, properly weighted according to the relative tonnage from each, and in turn reduced to relatives by weeks compared with

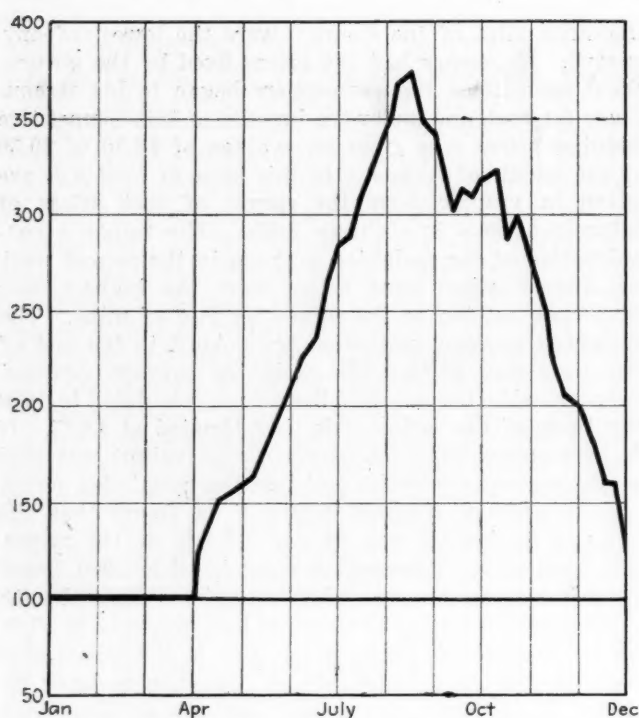
DESTINATION OF COAL DUMPED OVER TIDEWATER PIERS AT HAMPTON ROADS, BY WEEKS, 1920
(In Net Tons)

	Coastwise to New England (a)	Exports (a)	Bunker (b)	All Other (c)	Total Dumped
May, weekly average..	109,000	253,000	71,000	51,000	448,000
June, weekly average..	114,000	295,000	79,000	20,000	508,000
Week ended:					
July 3.....	146,000	299,000	59,000	4,000	508,000
July 10.....	149,000	295,000	71,000	11,000	526,000
July 17.....	108,000	262,000	65,000	10,000	445,000
July 24.....	148,000	332,000	67,000	6,000	553,000
July 31.....	136,000	392,000	68,000	8,000	604,000
Aug. 7.....	134,000	326,000	75,000	12,000	547,000
Aug. 14.....	116,000	358,000	71,000	6,000	551,000
Aug. 21.....	141,000	312,000	60,000	18,000	531,000
Aug. 28.....	166,000	308,000	53,000	13,000	540,000
Sept. 4.....	125,000	273,000	48,000	21,000	467,000
Sept. 11.....	98,000	237,000	54,000	16,000	405,000
Sept. 18.....	106,000	286,000	54,000	43,000	489,000
Sept. 25.....	143,000	328,000	79,000	22,000	572,000
Oct. 2.....	104,000	354,000	68,000	18,000	544,000
Oct. 9.....	92,000	237,000	75,000	16,000	520,000
Oct. 17.....	97,000	333,000	78,000	11,000	519,000
Oct. 24.....	79,000	340,000	83,000	26,000	528,000
Oct. 31.....	66,000	361,000	114,000	6,000	547,000
Nov. 7.....	109,000	214,000	55,000	28,000	406,000
Nov. 14.....	78,000	309,000	84,000	4,000	475,000
Nov. 21.....	83,000	286,000	67,000	5,000	441,000
Nov. 28.....	101,000	257,000	63,000	39,000	460,000
Dec. 5.....	106,000	223,000	98,000	27,000	454,000
Dec. 12.....	114,000	233,000	55,000	3,000	405,000
Dec. 19.....	115,000	189,000	75,000	17,000	396,000

(a) Cargo coal only. A small amount of other coastwise coal is included. (b) All bunker, whether foreign or domestic. (c) Includes coal used inside Capes and other local and coastwise tonnage coal for the Navy and for Panama.

the average government prices, taken as one hundred. Thus, starting at 100 on April 1, the index number of spot prices of bituminous coal as quoted for eighteen fields rose by the second week in August to 372, which means an increase of 272 per cent. At the end of the year spot prices had fallen until they were but 28 per cent above the average government maximum in effect during the last of 1918, despite the fact that labor and other costs mounted in 1920 at least 40 per cent.

Some indication of what coal cost the consumers in 1920 is found in statistics compiled by the Interstate



Relative spot prices of bituminous coal in United States 1920. Weekly spot prices on bituminous coal have been reduced to compare with the average government price taken as 100. The result is shown in this curve as an index number of spot prices.

Commerce Commission of quantity and cost of coal consumed by certain large railroads in locomotive service. However, as these data on costs include freight as well as the mine price of the coal, the figures are of value only as they give comparisons as between months and years. In the four months July to October, 1919, inclusive, for which the data are available, the range in average cost per ton for all roads was 5c. In the same months of 1920 the average cost of the coal used by the railroads reporting to the Interstate Commerce Commission ranged from \$4.25 in July to \$4.77 in October. Preliminary figures for November show a decrease to \$4.70.

Cumulative average cost of 93,620,000 net tons consumed in the first ten months of 1920 was \$4.05, compared with \$3.24 per ton in the same period of 1919. It is significant of the change in the market in the two years that in 1919 average costs in the months of July

to October were less than the cumulative for the year, but in 1920, because of rising prices, average monthly costs after June were well above the average for the year to date. Despite the high spot prices in 1920, the railroads were able to obtain their coal at an average increase of but 75c. per net ton over 1919.

The story of how and why prices rose and fell in 1920 is too well told in the pages that follow to require recital here. As the new year begins the coal industry, like other business in the United States and all over the world, is marking time awaiting the expected and hoped-for resumption. Just as no one was able in January a year ago to foretell the marvelous record for both tonnage and profits of the coal industry in 1920, so no one can see ahead to what 1921 holds in store.

La Follette Committee Considers Calder Coal Bill

HEARINGS were announced for Tuesday, Wednesday and Thursday, Jan. 18, 19 and 20, by the Senate Committee on Manufactures to consider Senator Calder's coal bill. This action followed a meeting of the Manufactures Committee on Saturday, Jan. 15, at which it was decided to confine the hearings to a few days in view of the fact that the Calder Committee had considered the matter and also that the committee investigated the coal industry in 1918.

At the Saturday session W. T. Chantland, one of the assistants of the Calder committee, presented to Senator La Follette's committee the testimony on coal taken by the Calder committee, and explained the purposes of the bill section by section.

Any interested parties appearing will be heard, and it is expected that among the witnesses will be Dr. Garfield, former Fuel Administrator. Prior to the public hearings, however, the committee called in A. G. Gutheim, of the American Railroad Association, to obtain his views on the legislation.

PRIORITY IN TRANSPORTATION of navy coal from Pennsylvania and Maryland fields was suspended, effective Jan. 15. In cancelling its Service Order No. 19 the Interstate Commerce Commission stated that the Secretary of the Navy had certified that the order no longer is necessary.

Average Cost Per Net Ton, Including Freight, of Coal Consumed by Locomotives in Road Service

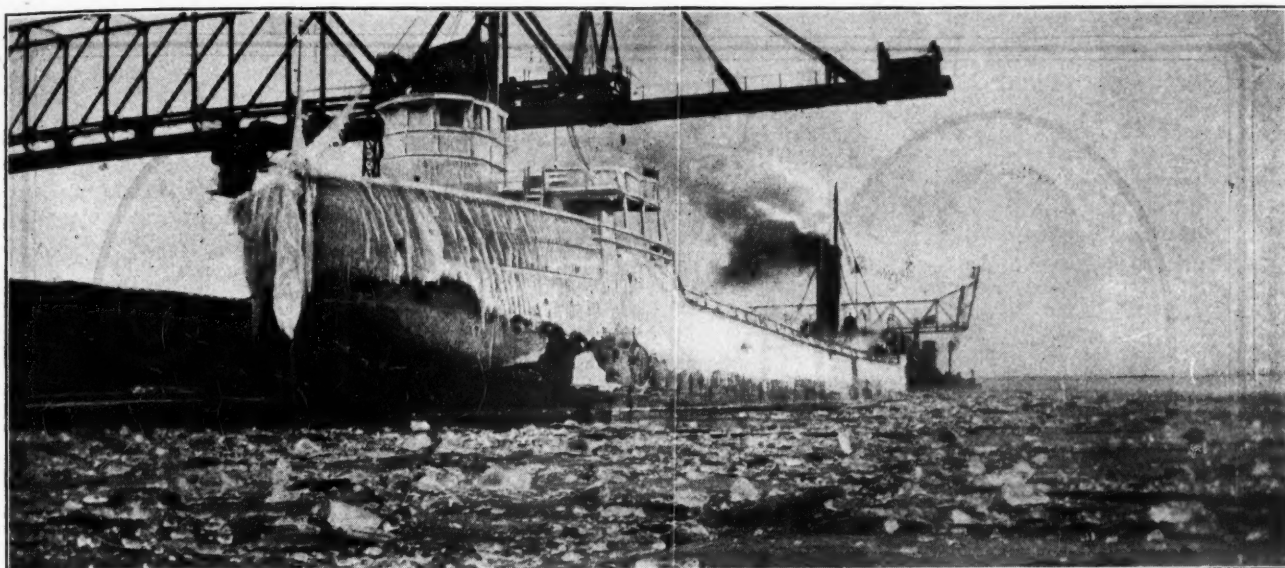
(As reported by the Interstate Commerce Commission)

Region	Month				Month			
	1919				1920			
	July	Aug.	Sept.	Oct.	July	Aug.	Sept.	Oct.
New England.....	\$5.26	\$5.01	\$5.30	\$5.59	\$9.49	\$9.57	\$8.84	\$7.84
Great Lakes.....	3.12	3.05	3.27	3.34	4.33	4.58	5.23	4.32
Ohio, Indiana—Allegheny.....	2.50	2.64	2.75	2.75	3.92	4.28	4.24	3.71
Pocahontas.....	2.45	2.65	2.59	2.62	4.06	4.48	4.38	3.62
Southern.....	3.06	3.02	2.91	3.14	3.97	4.42	4.15	3.78
Northwestern.....	3.75	3.72	3.43	3.70	4.38	4.79	4.43	4.22
Central Western.....	2.98	3.01	2.85	2.97	3.51	3.57	3.57	3.43
Southwestern.....	3.45	3.34	3.32	3.47	3.77	4.48	4.39	4.08
ALL REGIONS.....	3.12	3.11	3.10	3.24	4.25	4.56	4.54	4.05

Region	Cumulative from Beginning of the Year				Cumulative from Beginning of the Year			
	1919				1920			
	July	Aug.	Sept.	Oct.	July	Aug.	Sept.	Oct.
New England.....	\$5.82	\$5.76	\$5.67	\$4.99	\$7.38	\$7.75	\$7.72	\$9.21
Great Lakes.....	3.40	3.35	3.35	3.25	4.00	4.07	4.20	5.28
Ohio, Indiana—Allegheny.....	2.77	2.75	2.76	2.74	3.40	3.59	3.62	4.54
Pocahontas.....	2.60	2.60	2.60	2.81	3.26	3.42	3.52	4.46
Southern.....	3.24	3.20	3.15	3.00	3.51	3.58	3.69	4.52
Northwestern.....	3.86	3.83	3.49	3.63	4.07	4.18	4.04	4.86
Central Western.....	3.04	3.03	2.97	2.94	3.37	3.39	3.38	3.82
Southwestern.....	3.54	3.49	3.47	3.40	3.93	4.01	4.08	4.36
ALL REGIONS.....	3.32	3.28	3.21	3.16	3.80	3.91	3.95	4.77

AS THIS ISSUE OF *Coal Age* goes to press no effort has been made on the floor of the Senate to have consideration of the Calder bill transferred from La Follette's Committee on Manufactures to the Frelinghuysen committee. Strenuous efforts are being made by the Calder faction to railroad his bill through the Senate and it is authoritatively learned that every preparation has been made to report out a special rule in the House which will give the bill special consideration and limit debate thereon to two hours. Should the bill pass the Senate there is no doubt but that it will also pass the House.

THE MEETING of those interested in the formation of a Tidewater Coal Exchange at Charleston, S. C., which was to have been held in Knoxville, Tenn., on Jan. 28, 1921, has been postponed until Feb. 4, 1921.



Complex Features of 1920 Lake Traffic in Coal

While Shipments Were Nearly Seven Million Tons Short of Estimated Requirements, Increase in All-Rail Movement, Aided by Mild Weather, Industrial Depression and Priority Orders, Satisfied the Demand

BY WILLIAM A. WHITE

LAKE coal traffic for the 1920 season of navigation totaled 23,667,138 net tons, of which 22,408,355 tons was cargo coal. With the official ending of the Lakes season, Nov. 24, the Northwest's main source of coal supply was practically closed, but, as in other years, vessel movement continued well into the month of December. A review of the season proves interesting because of the national interest in the fuel situation in the Northwest and the alleged inadequacy of stocks on the docks for the winter of 1920-1921.

Requirements for both Canada and that portion of the United States dependent on its coal supply via the Lakes amounted to 28,000,000 tons of cargo coal in 1918 as against approximately 27,000,000 tons in 1913 and 1917, the previous high records. The bituminous carry-over on the docks from the season of 1918 was about 2,000,000 tons. April, 1920, however, saw less than 800,000 tons stored on the Lake docks,

due to the lighter shipments in 1919. This indicated a need of 1,600,000 additional tons of cargo to be carried up during the season of 1920; therefore the goal was set for 30,000,000 tons for the season.

Mild spring weather prompted an early start for the season, but so great was the call for coal after government control was removed, April 1, that little Lake business other than the seasonal contracting by producers with dock affiliations was transacted for the first sixty days. In fact, dumpings at Lake ports up to May 31 amounted to but 1,650,222 tons, one-third as much tonnage as moved in the same period of 1919. By the end of July less than 7,000,000 tons had been shipped, not more than half the dumpings of 1919 to that date.

The Northwest became alarmed and when coal could not be had except at extremely high prices it was urged that steps be taken to insure a coal supply

for the Northwest. The Interstate Commerce Commission, by Service Order No. 10, issued on July 20, effective July 26, established preference and priority in the supply of cars for the transportation of bituminous coal for the Northwest. The order provided that after a certain percentage of each day's mine loadings had been billed to the Lakes the remainder might be shipped elsewhere. The percentage from each originating field was determined by H. M. Griggs, manager of the Ore & Coal Exchange, appointed special agent of the commission for that purpose. It was hoped that in this way a movement of 4,000 cars per day could be attained, which would offset the delayed program and more than make up the shortage which had accrued by Aug. 1.

The effect of Service Order No. 10 was to boost the spot market on the heavy tonnage that was being forced to the Lakes. Prior to its issuance,

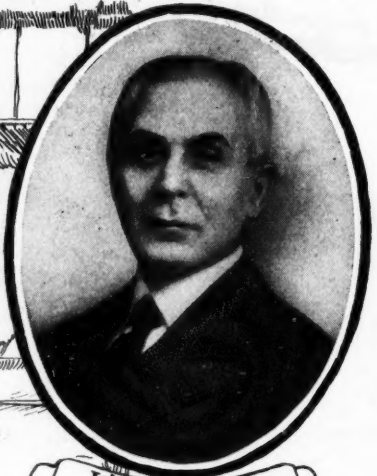
Bituminous Coal Loaded Into Vessels at Lake Ports as Dumped by Docks for the Season of 1920

(In Net Tons)

Ports	Railroads	1920			1919			1918		
		Cargo	Fuel	Total	Cargo	Fuel	Total	Cargo	Fuel	Total
Toledo.....	Hocking Valley.....	3,930,269	93,095	4,023,364	4,276,148	119,024	4,395,172	4,991,658	144,130	5,135,788
	Toledo & Ohio Central.....	1,729,894	65,695	1,795,589	1,159,908	33,925	1,193,833	2,123,001	54,910	2,177,911
	Baltimore & Ohio.....	1,619,875	44,804	1,664,679	2,293,513	53,888	2,347,401	2,960,128	64,930	3,025,058
	Pennsylvania.....	1,604,305	26,542	1,630,847	1,407,263	34,765	1,442,028	2,389,150	59,107	2,448,257
Sandusky.....	Wheeling & Lake Erie.....	1,864,527	93,919	1,958,446	1,437,640	50,876	1,488,516	2,094,324	75,403	2,169,727
Huron.....	Baltimore & Ohio.....	3,276,539	211,643	3,488,182	2,720,541	150,909	2,871,450	3,342,681	92,313	3,434,994
Lorain.....	Pennsylvania.....	1,221,955	180,335	1,402,290	2,234,951	249,693	2,484,644	2,547,479	292,898	2,840,377
Cleveland.....	Erie.....	437,653	19,234	456,887	305,977	9,904	315,881	670,322	22,814	693,136
Fairport.....	Baltimore & Ohio.....				16,692	12,954	29,646	271,148	46,436	317,584
	New York Central.....	1,641,732	274,396	1,916,128	1,667,048	149,965	1,817,013	1,954,276	211,312	2,165,588
Ashtabula.....	Pennsylvania.....	1,942,021	101,706	2,043,727	1,955,796	100,982	2,056,778	1,451,089	82,371	1,533,460
Conneaut.....	Bessemer & Lake Erie.....	2,405,884	41,076	2,446,960	1,372,321	10,398	1,382,719	2,212,947	32,945	2,245,892
	Pennsylvania—West.....	284,860	27,850	312,710	702,242	43,322	745,564	679,766	39,155	718,921
Erie.....	Pennsylvania—East.....	448,841	78,488	527,329	163,301	16,446	179,747	465,348	16,201	481,549
Totals.....		22,408,355	1,258,783	23,667,138	21,713,341	1,037,051	22,750,392	28,153,317	1,234,925	29,388,242



O.G. Scott
Central Illinois



W.D. McKinney
Southern Ohio

Coal Association Secretaries



C.J. Fletcher
Knox County
INDIANA



W.L.A. Johnson
Southwestern Interstate
MISSOURI

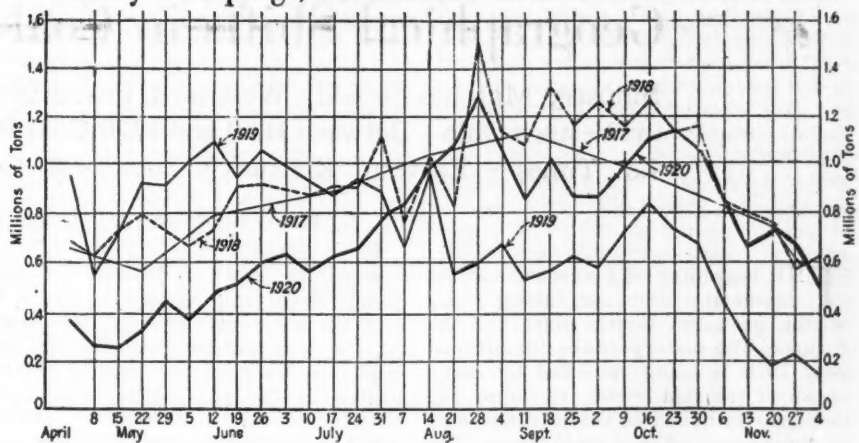
the meager shipments for the Northwest were mostly on contract at a range of \$3.25@\$3.75 per net ton f.o.b. mines. Lake prices immediately paralleled quotations for other markets and forced the general market price range still higher. Speculators entered the market in an attempt to take advantage of the situation by buying up coal forcibly diverted to this market.

Under the stimulus of the priority order, loadings increased steadily, the peak being reached for the week ended Aug. 28, when 1,262,868 tons of cargo and fuel coal were dumped into Lake vessels. From that week on the dumpings fluctuated but the trend was downward, as shown in the accompanying chart, following a general market decline from earlier high-price levels. Northwest dock interests were well stocked with mine run by the latter part of the season of navigation, but were in the market for lump sizes. However, price again was the deterrent to a heavy movement. Dock companies were hesitant about stocking coal at prices they felt would be out of line with the winter market at the upper ports. As the market declined so did their orders until it was necessary in October to place embargoes in several districts against shipments to the Lakes.

On Oct. 27 Service Order No. 10 was indefinitely suspended by the Interstate Commerce Commission, it having become apparent that the Northwest could not absorb the heavy movement of coal allotted to it and that tonnage was rapidly accumulating at the lower ports. From that date until the close of navigation shipments steadily declined, being almost entirely on contract obligations. Every effort was made to press tonnage on the docks, a straggling movement extending almost through the month of December, with an unusual number of storage boats sent up just before winter locked the Lakes. There was no life to the demand, however, and producers found the dull inland market reflected in the difficulty to place late shipments of spot coal via the Lakes.

All-rail coal from the Middle West-

Weekly Dumpings, Bituminous Coal at Lake Erie Ports



ern fields moves to the Northwest throughout the year, largely for railroad fuel, supplementing to the extent of some 3,000,000 tons the supply loaded off the docks. This year, because of inability to maintain the Lake schedule, several railroads of the Northwest increased their contracts for Indiana and Illinois all-rail coal and thus reduced their requirements for dock coal by an amount estimated at 3,000,000 tons. Some gas and electric concerns also have gone into the all-rail fields for a considerable tonnage.

Just how the dock interests will emerge in the spring of 1921 remains a question. It would seem as if their limited stocks should all be absorbed before that time, yet the possibilities of severe competition from the all-rail trade, extended into a further stretch of territory, may cut down the consumption of dock coal. The high prices ruling on dock coal have already provided a wider field for the sale of all-rail coal and with prices of Illinois coal again at low levels still sharper competition is offered. This will compel a reduction in dock prices or limit sales and the market promises to be very easy as long as mild weather continues.

At any rate a coal shortage in the Northwest has been averted. Lessened industrial consumption, curtailed domes-

tic use caused by an unseasonable autumn and diversion of supply to all-rail sources have all contributed to relieve the tension. Despite the promising situation, however, there are many coal men who feel that the Eastern mining companies affiliated with dock interests did not live up to implied obligations to Northwestern consumers.

SHIPPER'S PART IN HIGH PRICES

In serving the Northwest through many years the dock interests had implied a continuous service through the winter which their customers had a right to consider a recognized obligation. Hence, to the extent that they diverted a portion of their usual tonnage to other markets and left their affiliated concerns at the head of the Lakes with a curtailed supply by so much did they fail to live up to this implied obligation. Instead of seeking large profits elsewhere in the temporary emergency, it is argued, they should have taken care of the Northwest. If this had been done, it is asserted that the percentage of high-priced spot coal up the Lakes would have been greatly reduced. The average dock price for coal would likewise have been lowered, placing it more nearly in competition with the all-rail fuel purchased after the wild scramble for coal had ceased and prices had resumed more reasonable levels.

During the 1920 Lake season, which ended Dec. 13, 22,408,355 tons of bituminous cargo coal were forwarded to various American and Canadian points, the Geological Survey reports. Statistics furnished by the Ore & Coal Exchange show that of this amount 5,931,418 tons went into Canada. The proportion of the total shipped to Canadian destinations—26.5 per cent—was greater than in either 1918 or 1919, indicating that Canadian purchasers received their full share of the 1920 movement. Shipments to American ports on Lakes Superior and Michigan decreased both absolutely and relatively, while to Port Huron and Detroit River points a market increase was made, bringing the proportion of the total for those ports up to nearly 4 per cent.

DESTINATION OF CARGO COAL DUMPED AT LAKE ERIE PORTS DURING THE SEASONS OF 1918, 1919, AND 1920

Destination	1918		1919		1920	
	Net Tons	Per Cent	Net Tons	Per Cent	Net Tons	Per Cent
American:						
Lake Superior ports.....	12,726,910	45.2	9,425,770	43.4	9,330,287	41.6
Sault Ste. Marie Pt. and River points.....	587,811	2.0	350,341	1.6	562,494	2.5
Lake Huron-Georgian Bay ports.....	406,768	1.5	303,160	1.4	213,431	1.0
Lake Michigan ports.....	7,406,926	26.3	6,680,180	30.7	5,459,519	24.3
Port Huron and Detroit River.....	467,489	1.7	347,972	1.6	846,219	3.8
Lake Erie ports.....	131,683	0.5	72,856	0.4	64,987	0.3
Total American.....	21,727,587	77.2	17,180,279	79.1	16,476,937	73.5
Canadian:						
Lake Superior ports.....	2,152,326	7.7	1,580,642	7.3	1,965,052	8.8
Sault Ste. Marie Pt. and River points.....	1,143,096	4.1	810,796	3.7	1,092,428	4.9
Lake Huron-Georgian Bay ports.....	1,196,065	4.2	740,529	3.4	1,006,208	4.5
Port Huron and Detroit River.....	537,939	1.9	364,055	1.7	442,751	2.0
Lake Erie ports.....	29,238	(a)	49,393	0.2	9,678	(a)
Lake Ontario and St. Lawrence River.....	1,367,066	4.9	987,647	4.6	1,415,301	6.3
Total Canadian.....	6,425,730	22.8	4,533,062	20.9	5,931,418	26.5
Grand total.....	28,153,317	100.0	21,713,341	100.0	22,408,355	100.0

(a) Less than two-tenths of 1 per cent.

Geographical Shifts in Coal Production*

Industry Marches Steadily Westward, Production Center Now Being in Western Ohio—Between 1890 and 1920 Coal Production Increased 4.3 Times—Eastern Kentucky Increased Output Thirteenfold

By F. G. TRYON† AND W. F. MCKENNEY‡

THE beginning of a new year is the customary time for taking stock of the past and laying plans for the future. The history of the tumultuous year 1920 is being reviewed by every organ of the coal trade. By many the new year is hailed as the turning point in the history of coal in America, the point at which the industry, having struggled through five years of rough going, marked by an extraordinary war demand, the restraints of govern-

toward an era of tranquillity and steady progress. At such a time it is in order not merely to recall the events of the war period but also to look back over the road traversed by the industry in the past thirty years and thereby to see a little more clearly whither the path before us is trending. To one phase of this task of retrospection the present article is addressed, namely, shifts in centers of coal production and the relative rates of growth in the larger fields.

In the early years of the nineteenth century coal production followed the maxim "Westward the course of empire takes its way." Starting with a few tons of anthracite mined in Pennsylvania in 1807, the industry began its westward march, entering what is now West Virginia and Kentucky in the twenties, reaching Ohio and Illinois in the thirties, and in the early forties crossing the Mississippi and moving at the same time in another direction into the Southern Appalachians. Development in the Puget Sound region and the Northern Interior field at Michigan began just before the Civil War. The enormous reserves of the Rocky Mountains, however, remained untouched until the close of the Civil War. The baby in the ranks of coal producers is North Dakota, which first reported commercial output in 1884.

Since that date, while indeed new fields have been opened up in several states, there has been no significant addition to the ranks of coal-producing states.

CENTER OF PRODUCTION AND RESOURCES

In its westward movement coal production followed the path of the geographical center of population, which, beginning at a point just east of Baltimore in 1790, moved westward at the rate of about forty-five miles per year until in 1910 it was at the town of Bloomington, in Southern Indiana. Whither it has moved in the last census period the Bureau of the Census has not yet informed us, but there are

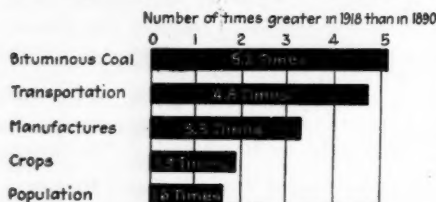


DIAGRAM I. OUR INCREASING DEPENDENCE ON COAL

We often say "coal is basic," but we ought to say also "coal is getting more basic." The diagram shows that production of soft coal increased more than fivefold from 1890 to 1918, or more than population and more than the volume of farm products, of manufactures, or of transportation.

ment regulation, and the inevitable period of readjustment, sets its face

*Published by permission of the Director of the U. S. Geological Survey.

†In charge of coal statistics, U. S. Geological Survey.

‡Assistant to F. G. Tryon.

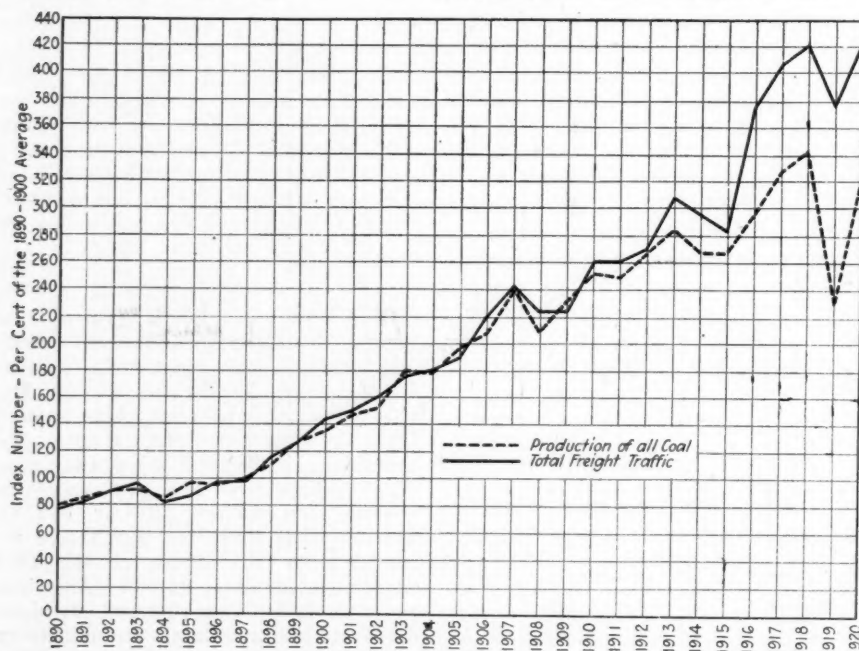


DIAGRAM II. GROWTH OF COAL OUTPUT AND OF VOLUME OF TOTAL FREIGHT TRAFFIC

To compare such unlike things as tons of coal produced and volume of traffic requires a common denominator, provided in this case by expressing the record for each year in terms of per cent of the average for 1890-1900. Coal output is for calendar years throughout, volume of traffic for fiscal years except for 1916-1919.

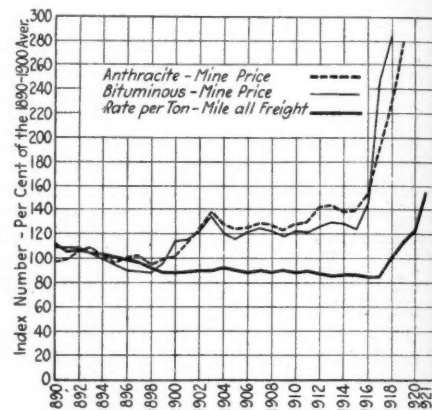


DIAGRAM III. COAL COSTS AND TRANSPORTATION COSTS

The cost of transportation, as indicated by average receipts per ton mile of all revenue freight, decreased in general from 1890 to 1916, while the cost of coal at the mine increased. Even the increase in rates during the war period has been smaller than the rise in mine prices. To facilitate comparison figures are expressed in terms of per cent of the 1890-1900 average.

many who infer that the development of war business in the Northeast has arrested for a time its westward march.

The movement of the center of population has, however, outstripped the westward migration of the center of coal production. As ascertained by Mr. Horton, of the Geological Survey, the center of coal output in the United States is in western Ohio, not far from the town of Urbana. The "center of coal production" is a mathematical conception, but it has some significance even to the practical coal man. It means that if all of the coal mined in a year were piled up on a great map at the point where it is obtained, and the map balanced on a point so that it would tip neither to one side or the other, the point would have to be located near Urbana. It is significant that the center of power demand, prob-

ably a pretty good indication of the center of coal consumption, also lies in western Ohio, just a little north of the center of coal production.

The center of coal resources, as distinct from production, is found by Mr. Horton to lie in central Nebraska, near the town of Kearney. The center of production therefore must travel westward some 900 miles before it reaches the center of the resources.

That production will ultimately migrate far in that direction is a prophecy that can hardly be disputed, although of course it does not follow that the center of demand will move westward at the same pace. Significant of the potential industrial position of

five years will be represented by the number 364 (see following table). The rate of production in the Interior fields, expressed in the same way, would be represented by the number 374, while that of the Rocky Mountain and Pacific States would be represented by 353.

RATE OF GROWTH OF BITUMINOUS PRODUCTION IN THREE GRAND DIVISIONS

(Figures are index numbers, and represent per cent of the 1890-1900 average)

	Appalachian Fields	Interior Fields ¹	Mountain-Pacific Fields ²
Average 1891-1895	85	90	86
Average 1896-1900	120	114	119
Average 1901-1905	189	186	189
Average 1906-1910	262	245	270
Average 1911-1915	313	285	288
Average 1916-1920	364	374	353

¹ Includes Michigan.

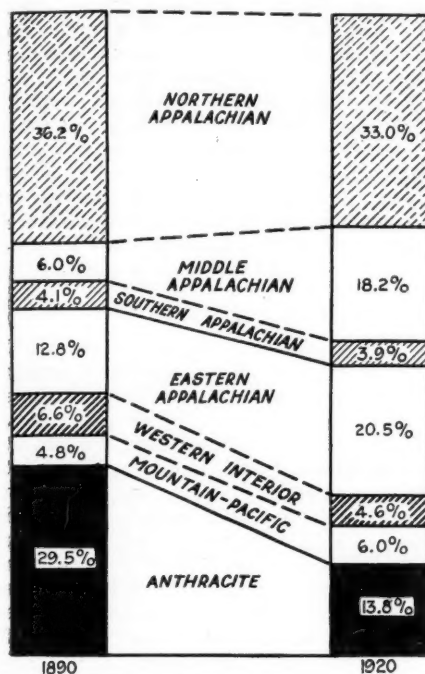
² Includes North Dakota.

It is clear from the foregoing table that by 1890 the larger competitive groups of fields had been staked out, and at that date an analysis of what

may be called the modern history of the coal industry may well start.

To the coal man the first outstanding fact about the generation from 1890 to 1920 is the extraordinary growth in the demand for coal. Between 1890 and 1918 the production of all coal, including anthracite, rose from 158,000,000 to 678,000,000 tons. In other words, it increased 4.3 times. Considered separately, even more rapid was the growth of bituminous coal, the production of which increased from 111,000,000 tons in 1890 to 579,000,000 in 1918. To grasp the real significance of this enormous increase it must be compared with the rise in other basic factors in our industrial life.

Population in 1918 was 1.6 times as great as in 1890. The volume of farm crops and of manufactured goods (expressed not in the fluctuating standard of the dollar but in terms of physical units available for human needs) has been shown by Prof. W. W. Stewart



RELATIVE GROWTH OF OUR LARGE COAL FIELDS

In parallel columns, each equal to 100 per cent of the total coal output in 1890 and 1920 respectively, are shown the proportions of the whole output from the seven main coal fields. The largest increases were in the Middle and Eastern Appalachian and the greatest decrease has been in anthracite.

the Far West is the fact that not far from the center of coal resources lie also the centers of potential water power and of our resources in oil. The former, Mr. Horton places near the center of Wyoming; the latter, close to the Trinidad and Raton coal fields, which face each other across the Colorado-New Mexico boundary.

Since 1890, however, there has been no great shift in the center of gravity of coal production, at least as far as bituminous coal is concerned. By that time developments had begun in most of the important deposits, production had hit its stride, and, in spite of great local variations, there was a tendency for East, West and Interior to advance in company front. For example, if we group together all of the Appalachian fields from Pennsylvania and Ohio south to Alabama, and express their average production for the years 1890 to 1900, inclusive, by the number 100, then their production during the past

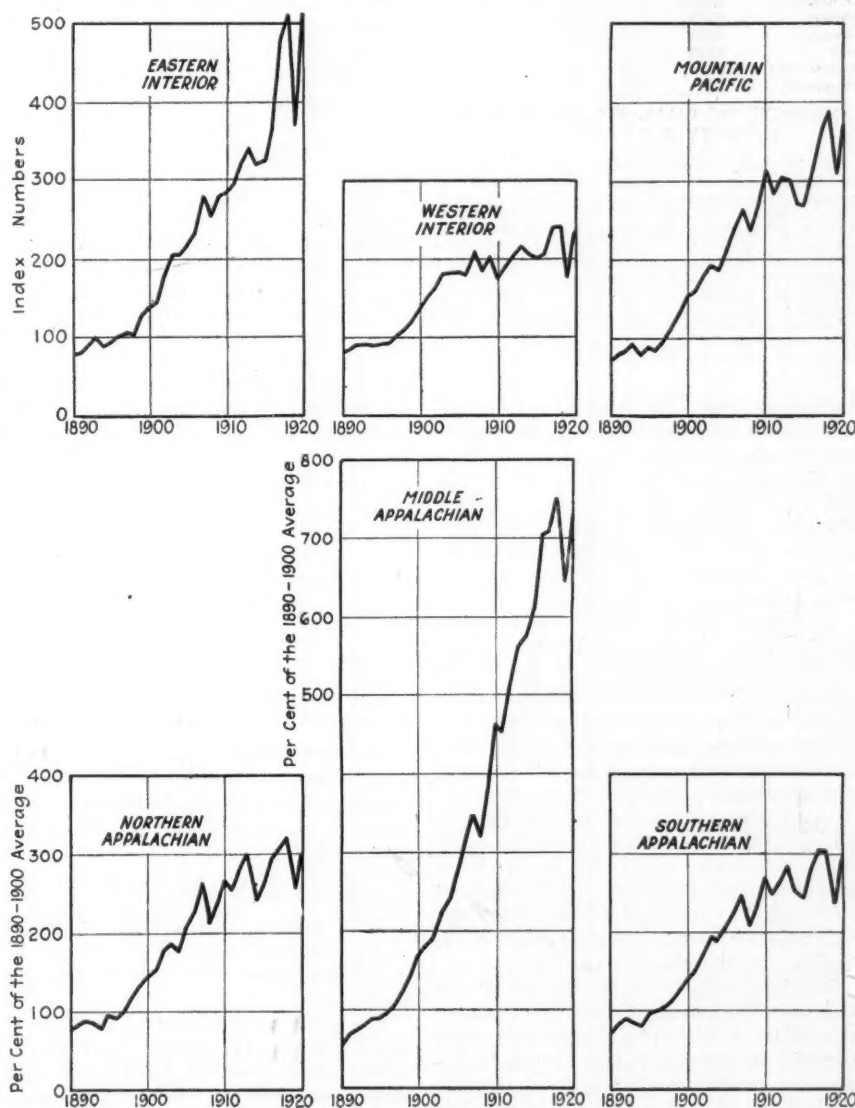
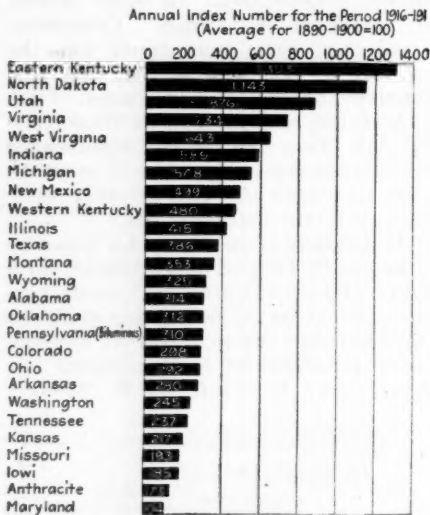


DIAGRAM V
RATES OF GROWTH OF PRODUCTION—BY PRINCIPAL REGIONS, 1890-1920

The output of the various fields has been generally increasing, but at very unequal rates. The Middle Appalachian region (eastern Kentucky, West Virginia and Virginia) has increased its production with extraordinary rapidity, and next to it has been the Eastern Interior Region (Illinois, Indiana and western Kentucky). It is noteworthy that these are the fields where in general the transportation disability has been most acute in recent years. The region of smallest increase has been the Western Interior. To facilitate comparison production in each region is expressed in terms of per cent of the average for the base period 1890-1920.

to have been respectively 1.9 and 3.3 times greater in 1918 than in 1890.³ The physical volume of transportation, having due regard for both freight and passenger traffic, was 4.8 times as great in 1918 as in 1890. These comparisons serve to emphasize our increasing dependence upon coal, particularly bi-



GROWTH OF COAL PRODUCTION IN TWENTY-SIX DISTRICTS

To be fair, comparisons of growth should be based not on a single year but on an average for a series of years. The diagram compares the average for the last five years (1916-1920) with the average for the base period (1890-1900). Thus if we represent the 1890-1900 average for each district by the figure 100 the 1916-20 average for eastern Kentucky will be represented by the index number 1,303. This is just another way of saying that the eastern Kentucky average for 1916-1920 is more than thirteen times as great as that for the base period.

bituminous coal. To satisfy this ever-increasing demand required the opening up of new fields and of new mines in old fields. On the average throughout this period the American market absorbed 17,000,000 tons of new production each year, and during periods of most rapid growth the new tonnage was sometimes 40,000,000.

To what extent did the many producing fields participate in the annual increment of new business? Not at all equally, as we shall see. While eastern Kentucky increased its output thirteen-fold from the base period, 1890-1900, to the year 1920, the State of Maryland was producing little more at the end of the period than at the beginning. In explanation of these unequal rates of growth many conditions, such as the extent of the reserves, the quality of the coal, the costs of mining, and the accessibility of the region to transportation, at once suggest themselves.

No less important in the long run has been the trend of growth of transportation facilities during the same period. In the early days it not infrequently happened that a local deposit of low-grade coal was opened up, but that, as the increase in transportation made possible competition from other

³"Index Numbers of Production," paper read at the annual meeting of the American Economic Association, Atlantic City, Dec. 27-30, 1920, by W. W. Stewart of Amherst College.

SOURCES OF THE COUNTRY'S COAL SUPPLY, 1890 AND 1920

Region	Million 1890	Tons 1920	Per Cent of All Coal		Per Cent of of Total Bituminous	
			1890	1920	1890	1920
Bituminous:						
Northern Appalachian.....	57.1	212.7	36.2	33.0	51.4	38.2
Middle Appalachian.....	9.4	117.5	6.0	18.2	8.5	21.2
Southern Appalachian.....	6.5	25.2	4.1	3.9	5.9	4.5
Northern Interior ⁵	0.1	1.4	0.1	0.2	0.1	0.3
Eastern Interior.....	20.1	131.1	12.7	20.3	18.0	23.6
Western Interior.....	10.5	29.6	6.6	4.6	9.4	5.3
Rocky Mountain and Pacific Coast ⁶	7.5	38.6	4.8	6.0	6.7	6.9
Total bituminous.....	111.2	556.1	70.5	86.2	100.0	100.0
Anthracite.....	46.5	89.0	29.5	13.8		
Total, all coal.....	157.7	645.1	100.0	100.0		

⁵ Michigan. ⁶ Includes North Dakota.

districts, the product of the field could not be sold in competition with better coal brought from a distance. Cheap transportation favors good coal. Costly transportation encourages the local development of poor coal.

The trend of coal output, of the volume of transportation, and of the costs of both coal and transportation are shown in diagrams II and III. The close correspondence between the growth of the production of coal (including anthracite) and of the volume of freight traffic during the years 1890 to 1912 is shown in diagram I. Since 1912, however, the number of ton-miles of freight of all kinds carried has been increasing more rapidly than the production of coal. As the index of coal in the diagram is based on tons rather than ton-miles, one explanation of the widening gap between the line of coal and the line of freight traffic may be a relative increase in the haul. There are many coal men, however, who will interpret the discordance between the two lines as meaning that with the pressure of freight traffic upon the ability of the railroads to transport, there has been a tendency to prefer higher class freight, giving larger returns to the carrier, in place of coal.

In diagram III the trend of the cost of coal f.o.b. mine is compared with the average rate per ton-mile on all revenue freight. The course of the latter is at best only an approximate index to the course of the rate on coal, for coal as a commodity has been made the subject of important rate adjustments, independent of changes in the general level of all rates. Considering, however, the fact that coal constitutes about a third of all the freight carried, whether measured in tons alone or in ton-miles, it appears safe to assume that the general trend of the average for all freight would be in the same direction as for coal alone.

The general tendency of transportation costs was downward from 1890 to 1916, while that of coal costs f.o.b. mine was slowly upward. Throughout that period, therefore, the conditions were such as, other things being equal, to encourage the wider shipment of the high-quality coals from the Appalachian region as against those of the Interior, or on the other hand, to encourage the Eastern Interior coals

at the expense of their competitors of the Western Interior States, just west of the Mississippi. It is further to be noted that even the sharp increase in transportation costs since 1917, including the latest increase of Sept. 1, 1920, has been proportionately less than the increase in mine costs and it would appear that the present relation of rates and mining costs is such as to continue to encourage the long-distance shipment of high-quality coals in preference to local low-quality coals.

SHIFTS IN PRODUCTION, 1890-1920

The extent and nature of the shift in the sources of the country's supply from 1890 to 1920 are shown in the following table, and in graphic form, in diagram IV. Considering the output of anthracite and bituminous as a joint source of supply (diagram IV), the most striking change during the period has been the decline in the proportion of anthracite, from 29.5 per cent in 1890 to 13.8 per cent in 1920. Of the bituminous fields, three major districts have decreased in terms of per cent of the total output contributed. These relatively stationary fields are the Northern Appalachian, the Southern Appalachian and the Western Interior. Two of the bituminous regions have greatly increased in proportion of the total contributed—the Middle Appalachian, 6 to 18.2 per cent, and the Eastern Interior, from 12.8 to 20.5 per cent.⁴ As pointed out above, however, the localities of rapid growth have been in part in the East, in part in the Interior and the West, so that the relative proportions contributed by East, West and Interior as a whole have been constant.

SHIFTS IN BITUMINOUS PRODUCTION

Section	Per Cent of Total Bituminous	
	In 1890	In 1920
Appalachian.....	65.8	63.9
Interior.....	27.5	29.2
Montana-Pacific.....	6.7	6.9

We may in passing note the dominant position occupied by the Appal-

⁴The states included in these groups are as follows: Northern Appalachian, Pennsylvania, Ohio and Maryland; Middle Appalachian, West Virginia, Virginia, eastern Kentucky; Southern Appalachian, Tennessee, Georgia, Alabama; Northern Interior, Michigan; Eastern Interior, Illinois, Indiana, western Kentucky; Western Interior, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Texas; Mountain-Pacific, Colorado, New Mexico, Utah, Montana, Wyoming, North Dakota, Washington.

achian region, which even in 1920 produced five-eighths of all the soft coal mined.

To compare rates instead of tonnage a common denominator is necessary, and again the index number, in which each year's output is expressed in terms of per cent of the 1890-1900 average offers a convenient method of comparison. Diagram V reveals at once the extraordinary rate of growth maintained by the Middle Appalachian region, which reached in 1920 the index of 730. Next to it comes the Eastern Interior, with a 1920 index of 512,

followed in turn by the Mountain-Pacific with 373. The Northern and Southern Appalachian regions, which have been developing at almost exactly the same rate, show a much slower growth. Their 1920 indexes are 295 and 283 respectively, but little, it will be noted, above the level of the year 1913. Slowest of all in development has been the Western Interior field, the index for which last year was only 233 and where during the decade before the country entered the war production showed practically no increase. The same inequalities are shown even more

strikingly, state by state, in diagram VI.

These diagrams throw a flood of light on the problem of transportation disability at the mines. The fastest growing field, the Middle Appalachian—including among other districts Eastern Kentucky and West Virginia—has been the scene of most acute car shortage during the past five years. The region next in rate of development—the Eastern Interior—also has had a serious problem in car supply since 1917 whenever demand was active.

Avert Government Control of the Coal Industry by Reform from the Inside

Merchandising Should Be So Perfected That a Fair Proportion of All Sizes Will Be Used in Each Locality—Improved Distribution Needed—Price Inconsistencies Declared To Be Greatest Evil—Downward Adjustment of Freight Rates Advocated

BY J. E. LLOYD*

THE season of good resolutions is here again. Many will be made, but how many will be kept? Probably more would be kept if everyone would try his level best to help in the general reform. There are a number of good resolutions that need to be made and kept in the coal trade. In the past there has been too much fault finding and not enough of the real spirit of co-operative assistance. The coal trade always has been and probably always will be abused by the public press, but to a lesser degree if we honestly try to put into effect some much-needed reforms.

Has there ever been any real salesmanship displayed in selling coal? To my mind, there has not—it has just sold itself. There has been no conspicuous effort to really merchandise coal. What effort has been made by the operators to show large consumers the advantages and great saving to be made by using the steam sizes of coal under the proper engineering conditions?

Certain sections of the country will burn only stove and chestnut for family use, which penalizes consumers in other parts of the country. All sections where anthracite coal is used should burn a fair proportion of each size. This is by no means all the operator's fault. The retailer simply sells and tries to buy what his customers wish, even though by a little real selling effort his customers could be shown that they could save both money and coal at the same time.

Let our first New Year resolution be a real effort to merchandise coal.

Secondly, we have the matter of distribution. What has been done to effect an improvement in this direction? Every time the coal trade has been put to the test there has been almost total failure. Is there any other commodity so universally used that is either so plentiful or so scarce as coal?

A new plan must be worked out and at once, or some sort of government supervision will be tried.

Last, but by no means least, we have the matter of price. Conditions that have prevailed during the past year are most dangerous to all engaged in the coal industry. Some plan should be worked out to prevent a repetition of recent price evils or public clamor through the press will force the government to take some drastic action.

The public is entitled to and should receive coal of uniform quality in a given community at a uniform price. Every operating company should make a profit from the operation of its mines and the matter of freight revenues should not control the price. Freight rates on coal should be adjusted and in most cases, I believe, downward.

SHOWS NECESSITY FOR CONSTRUCTIVE WORK

The Calder committee, if it wishes to do something constructive, should co-operate with the Interstate Commerce Commission on investigations and adjustments of coal freight rates. I am not in sympathy with all the actions of the Senate committee, but, on the other hand, can we place all the blame on it? Have we done our best to improve conditions and work out a real constructive program? If we have not, can we do so, or must we admit our failure as practical business men and allow the government to step in and manage the coal business for us?

Let the organized coal trade admit the facts as they are and honestly try to remedy them. We have brains in the industry to do this and in such a way that the coal trade will be a model of good business methods, instead of one of the most glaring examples of mismanagement in the modern business world.

There are selfish interests who, no doubt, will not go along willingly and it is because of these very interests that the coal trade is in its present chaotic condition and in the shadow of at least some kind of government supervision, if not even government control.

*President, National Retail Coal Merchants Association.

Production of Anthracite in 1920 Encountered Numerous and Varied Obstacles

Total Output of Approximately 79,285,000 Gross Tons Exceeds Yearly Average of Last Decade by About 475,000 Tons—Strikes and Holidays Reduced Possible Output to Considerable Extent

BY E. W. PARKER*

*Director, Anthracite Bureau of Information.

ACCORDING to the records of the shipments of anthracite as reported to the Anthracite Bureau of Information at Philadelphia, the total production for the calendar year 1920 showed an increase over that of 1919 of about 1 per cent, amounting to approximately 79,285,000 gross tons. In 1919, according to the U. S. Geological Survey, the total production was 78,501,931 gross tons. Excluding 1917 and 1918, in which production was abnormally stimulated in order to meet the demands created by the World War, and whose output included exceptionally large amounts of "washery" coal, the average production of anthracite for the decade from 1910 to 1919 inclusive was 78,811,724 tons, an amount exceeded by the production in 1920 by about 475,000 tons. In both 1919 and 1920 the anthracite industry was affected by influences which reduced the possible production by approximately 4,000,000 tons.

CAUSES OF PRODUCTION LOSSES

Following the release on Feb. 1, 1919, of government regulation of production and distribution of anthracite, and a winter of unusually mild temperature, the domestic demand fell off sharply, so that notwithstanding some 2,000,000 tons were mined and put in storage, the production in February fell below normal by about 1,500,000 tons; 2,000,000 tons more were lost in March and April showed a decrease of about 500,000 tons. The difficulty in meeting the demand, which was the pronounced feature of the trade during 1920, had its origin in the mistaken policy of consumers and dealers of cancelling orders and refusing to accept coal in the spring of 1919. The winter of 1919-20 was as abnormally severe as the preceding one had been abnormally mild, and the spring of 1920 opened with bins of dealers and cellars of householders practically bare of fuel.

The shortage created in 1919 would not, however, have been of serious moment except for the similar condition in 1920, brought about, first, by the outlaw switchmen's strike in the railroad yards in April, which so interfered with the movement of cars to and from the mines that the production of that month fell short about 1,250,000 tons, and second, by the "vacation" strikes of miners in September, which was intended to voice their dissatisfaction with the award of the U. S. Anthracite Coal Commission and which

resulted in curtailment of output by about 2,500,000 tons. An extra holiday in November (election day) reduced the tonnage for that month by about 250,000 tons.

Except for the incidents cited above the production of anthracite in each of the last two years would have amounted to about 83,000,000 gross tons. The shipments, by months, in both years as reported to the Anthracite Bureau of Information, are shown in the following table (shipments from the Bernice basin in Sullivan County are not included in this statement):

	1919	1920
January.....	6,066,689	5,868,835
February.....	3,951,898	5,046,483
March.....	4,016,290	6,077,821
April.....	5,326,363	4,814,211
May.....	5,817,756	6,155,878
June.....	5,737,472	6,319,957
July.....	6,189,740	6,389,100
August.....	6,241,809	6,207,653
September.....	5,786,282	3,592,954
October.....	6,671,891	6,240,901
November.....	6,066,501	5,765,347
December.....	6,251,736	†6,250,000
Totals.....	68,124,427	68,729,140
† Estimated.		

The calendar year opened auspiciously, the three months of January, February and March recording a normal production for that period and one considerably in excess of the corresponding period in 1919, when output was below normal because of the slump in demand in February and March, following a mild winter and the release of government control over the production and distribution of anthracite. Trouble began with the first month of the coal year, April, when the effects of the "outlaw" switchmen's strike in the yards of the transportation companies was shown in the reduction of the shipments for that month to 4,812,153 tons. This strike was not of long duration, having expended its force about the 20th of the month, but it was enough to cause a loss in the production of anthracite of approximately 1,400,000 tons, as in the four succeeding months anthracite shipments averaged about 6,200,000 tons.

One disturbing factor of a local nature, but which reduced production by approximately 750,000 tons, was a strike in the mines of the Pennsylvania Coal Co. in the vicinity of Pittston in protest against the contracting system employed by that company in operating certain portions of its properties. This strike, which began early in July, when the Anthracite Wage Commission was sitting at Scranton, affected some 10,000 men and was continued for nearly three months. It was finally

settled through the action of the contractors in giving up their contracts. The contracting system had been the subject of some controversy in the adjustment of wage agreements for a number of years, but had never before assumed such serious proportions. It is now in the discard.

As a result of the outlaw switchmen's strike in April and the miners' "vacations" in September the production of anthracite for the eight months of the coal year beginning April 1 and ending Nov. 30 showed a decrease of 1,550,000 gross tons, as compared with the preceding year. The decrease in production of domestic sizes was more than twice as much as the decrease in total tonnage, for the quantity of coal recovered by washeries from the culm banks this year exceeded that of 1919 and made up in part, by larger output of steam sizes, the smaller production of domestic coal. The output of fresh-mined coal, which furnishes the domestic sizes, is about 3,700,000 tons below what it was last year, a situation for which the "vacation" strikes and numerous holidays are directly responsible.

EMBARGOES ADD COMPLICATIONS

The situation in New England was aggravated by the embargoes placed against anthracite shipments by the railroads serving that territory. From April 1 to Aug. 31, a period of 150 days, there were only 30 days that anthracite could be shipped without special permit into the territory served by the New York, New Haven & Hartford R.R. During the same period embargoes were in effect on the Boston & Maine and on the Boston & Albany for a total of 78 days each. Movement by water to Sound and Atlantic Coast ports was prevented for about two months by the strike of the towboat men in New York Harbor.

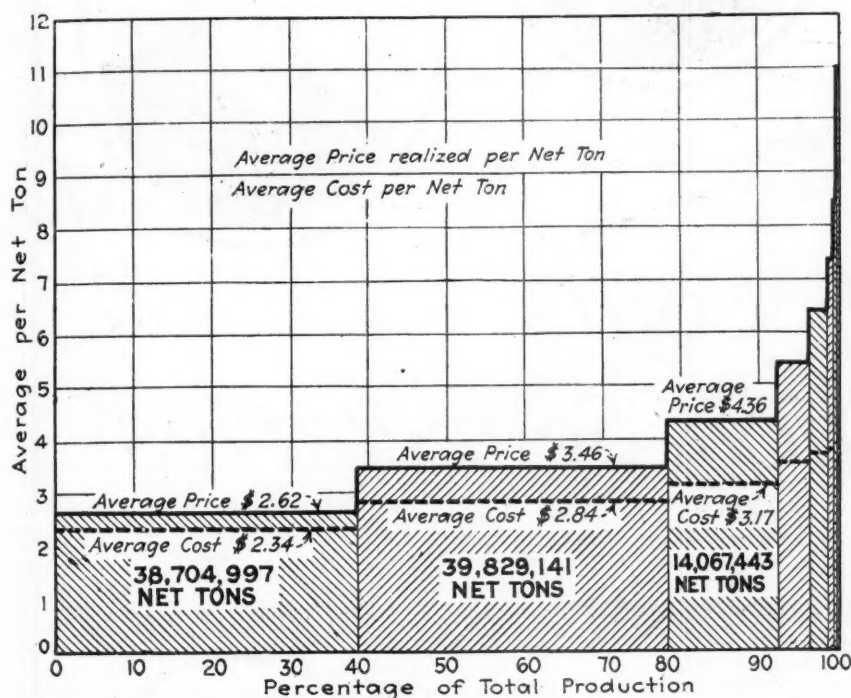
One of the most unfortunate developments of the year arising from the disturbance of the regular methods of distribution, due to the causes already referred to, was the creation during the last half of the year of a feeling of apprehension in the minds of dealers and consumers who had not been able to secure their full supplies that the arrival of cold weather would find them without fuel. In no inconsiderable part of the anthracite-consuming territory this feeling of apprehension partook somewhat of the nature of panic, which resulted in a scramble for coal unprecedented in the history of the industry.

Consumers and dealers were bidding against each other for any free coal that was to be had—that is, coal that was at the disposal of operators and middlemen and which was not committed to a regular trade—which naturally had the effect of skyrocketing prices on such tonnage as was available. The proportion of the anthracite production affected by this situation was less than 1 per cent of the total output, but the publicity given to it and the advantage taken of it by

some retail dealers to base the prices of all of their coal on the high-cost portion of it created an impression that producers generally were taking advantage of the situation to mulct the public, whereas as a matter of fact by far the larger part of the production has been sold at prices that were not only reasonable but were actually below what would have been justified by the increased cost of production and the earning of profit on the capital invested.

Government participation in the problems that confronted the anthracite industry in 1920 was not confined to the Department of Justice, for the Senate Committee on Reconstruction and Production, of which William M. Calder is chairman, extended its activities to include investigations of the coal business, notwithstanding the fact that a sub-committee of the Committee on Interstate and Foreign Commerce, of which Senator Frelinghuysen is chairman, was considering coal.

Average Prices Realized for Bituminous Coal, with Production Costs, January 1 to October 1, 1920



THE information depicted above in graphic form and shown in detail in the accompanying table with respect to the prices realized by the bituminous coal mining companies for their output from Jan. 1 to Oct. 1, 1920, was obtained by the National Coal Association direct from the producers. They were requested to furnish this information in confidence in order that it might be placed before proper government officials in tabulated form. The operators began complying with this request, and by Dec. 18 practically five hundred reports had been received. On that date the Senate Committee on Reconstruction and Production subpoenaed all of these reports with attendant newspaper publicity, which had the immediate effect of stopping the forwarding of reports by the remaining operators. However, when these five hundred returns first received had been returned after scrutiny by the Calder committee the association tabulated them, and the attached figures show the result.

The averages shown in the tabulation above were obtained by combining the monthly totals of all companies whose average prices fell in the respective groups. It was impossible to obtain the individual sales transactions of the several companies. The number of companies in each group includes all companies whose average prices fell within that group in one or several

months, consequently the sum of the companies shown in each group exceeds the total number of companies reporting.

These figures show that the 100,000,000 tons produced in the first nine months of the calendar year 1920 by the 494 companies reporting were produced at an average cost of \$2.76, and sold at an average price of \$3.47 per ton, f.o.b. mines; this leaves a margin of 71 cents per ton. But that margin is not profit by any means. It is safe to say that not even half of it will actually be profit because all interest on

bonds and borrowed money and all income and excess profits taxes must be deducted from that margin before the producing company has any profit.

It will be noted that 78,500,000 tons of the 100,000,000 tons were sold at prices averaging less than \$4 per ton; that 14,000,000 tons were sold at average prices between \$4 and \$5 per ton, with a general average price of \$4.36; 4,000,000 tons were sold at an average price of \$5.41; 2,000,000 tons were sold at an average price of \$6.44. Only 1,335,000 tons, or 1.32 per cent of the total production were sold at prices in excess of \$7. It will be noted, therefore, that the prices which may seem excessively high are confined to a small proportion of the bituminous coal production, as shown by these reports. It will further appear that the cost of production invariably increases as the realization increases.

It is also very important in this connection to note that most of the companies charging these high prices are companies whose costs of production are very high. Some of them are producers of very high-grade special-purpose coal, which customarily commands a large premium in any coal market. The others produce lower quality coal and must operate at a loss under ordinary market conditions or must shut down entirely. Accordingly, if the latter companies are to make any profit at all they must obtain relatively high prices when supply and demand conditions make for unusually high prices of bituminous coal. They constitute a reserve output which comes into the market to increase the supply when demand for coal is extraordinarily great.

It is clear, therefore, from the confidential reports of these producers to the National Coal Association that the loose and widespread charges of general, indiscriminate, conscienceless profiteering on the part of the bituminous coal mine operators are absolutely baseless and without justification.

STATISTICAL REPORTS OF MEMBERS OF THE NATIONAL COAL ASSOCIATION

Number of Companies	Classification According to Monthly Average Prices	Net Tons Produced and Sold at Foregoing Prices	Per Cent of Total Tonnage	Average Price Realized per Net Ton	Average Cost per Net Ton	Average Margin (%) per Net Ton
315	Less than \$3.00	38,704,997	38.53	\$2.62	\$2.34	\$0.28
237	\$3.00 to \$3.99	39,829,141	39.65	3.46	2.84	.62
138	\$4.00 to \$4.99	14,067,443	14.01	4.36	3.17	1.19
96	\$5.00 to \$5.99	4,203,061	4.19	5.41	3.53	1.88
64	\$6.00 to \$6.99	2,306,962	2.30	6.44	3.70	2.74
36	\$7.00 to \$7.99	828,609	.82	7.35	3.77	3.58
19	\$8.00 to \$8.99	254,186	.25	8.46	3.95	4.51
19	\$9.00 to \$9.99	119,053	.12	9.52	4.07	5.45
16	\$10.00 and over	132,853	.13	10.98	4.31	6.67
494 (a)	Totals	100,446,304	100.00	\$3.47	\$2.76	\$0.71

(a) Many companies fall in more than one group.

(b) The margin should not be confused with profit. See explanation above.

Coal
Association Secretaries

W. E. Koepler
Pocahontas

Geo. Heaps, Jr.
Iowa

J. E. McCoy
Southern Appalachian

H. W. Little
Southern Indiana

G. D. Kilgore
Virginia

T. F. Diefenderfer
Northwestern Pa.

WITT

America's Export Coal Opportunities in 1921

Disastrous Results of Sending Out Unsold Cargoes Taught Speculators a Costly Lesson—Market Now Dull Because of Oversupply—Elimination of Speculative Element Expected to Hasten Return of Normal Conditions

By C. ANDRADE, JR.*
New York City

PRIOR to the World War England and Germany were competing to control the export coal markets of the world, but Germany was eliminated in 1914 and England has since found herself unable to maintain her former rate of export shipments. To fill the gap foreign buyers of coal began in 1919 to apply to the United States for tonnage. In this way American coals were introduced to new and wider markets in South America, on the Mediterranean shores and in western Europe.

A tremendous foreign demand for American coal thus created was augmented last summer by the British coal strike and the failure of Germany to deliver her quota of coal under the Spa treaty. At the same time other factors were at work in the United States which sent coal prices very high and many of the export coal contracts were only partly filled owing to the inability of the exporter to obtain coal from the domestic market.

EXPEDIENCY IN ORDERING

European consumers then began to figure that they must order about three times as much coal as they needed in order to get their actual requirements. They proceeded on this theory until in the late summer and early autumn American exporters caught up with the demands, and at times actually exceeded their contract quotas.

Speculators, who have and had no proper place in the coal trade, entered the export business, loaded ships with coal and sent them out unsold, thinking that on the rising market they would realize large profits. These floating cargoes were sold for awhile, but when the market dropped in the early autumn many could not be sold and European ports are now largely overstocked as a result.

OBSTACLE TO PRICE STABILITY

The sending out of unsold cargoes is perhaps the most hazardous undertaking in the coal business, and as long as it continues there can be no hope for normal prices from foreign customers. This evil, like most others, will soon correct itself, because the speculators who sent out these floating cargoes are taking heavy losses, and probably will be deterred from attempting further activities of the same kind in the future.

Of course, it is self-evident that the oversupplies which have reached

Europe must be burned up in due course, and when they are burned up Europe inevitably will need more coal. It is equally self-evident that a part of this coal will have to come from America. While, therefore, the present market is perhaps the dullest in history, there is no reason to suppose that this condition will continue forever. On the other hand, there is every indication that when the speculative newcomers have been eliminated from the coal business the trade will get back to its normal basis.

PRICES AND GOVERNMENT CONTROL

One of the chief things to be remembered is that the present fluctuation in prices has been due in no small measure to the Government of the United States, through its different agencies, in attempting to control in one way or another the price and movement of coal. We had the Fuel Administration, with its regulation of prices and coal movement. Later we had the Shipping Board, with its foreign rates, and we had various forms of license control which undertook to regulate the movement of export coal. We also had various Interstate Commerce Commission orders, which diverted coal from its normal channels in unexpected directions, which were directly responsible

for some of the vagaries in price which we witnessed in the last six months. Now we have the prospect that the Calder committee may attempt to pass laws for further regulation of the industry.

It is the consensus of the trade that any such continuation of government control or interference will be disastrous. The activities of government agencies in the past have led to a good deal of disquiet and lack of certainty in the minds of the coal industry and no one knows where he stands or what he may expect. Therefore if the coal industry is to regain a normal basis, government control of business must cease.

BUSINESS TO HELP ITSELF

Fortunately, we have assurances from many men high in the coming administration that business of the United States will be left to itself to work out its own problems and to reach a pre-war basis, which was so satisfactory to the nation.

We believe there is no more urgent question than this before the nation, and we believe that all possible agencies and influences should be brought to bear on the coming administration so as to insure the business of the country being allowed to solve its own problems in its own way.

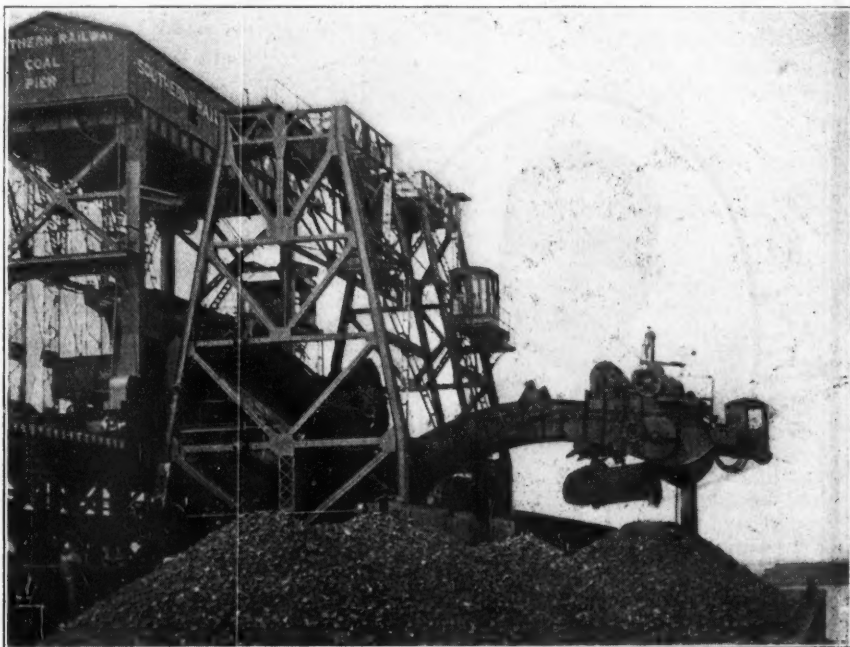


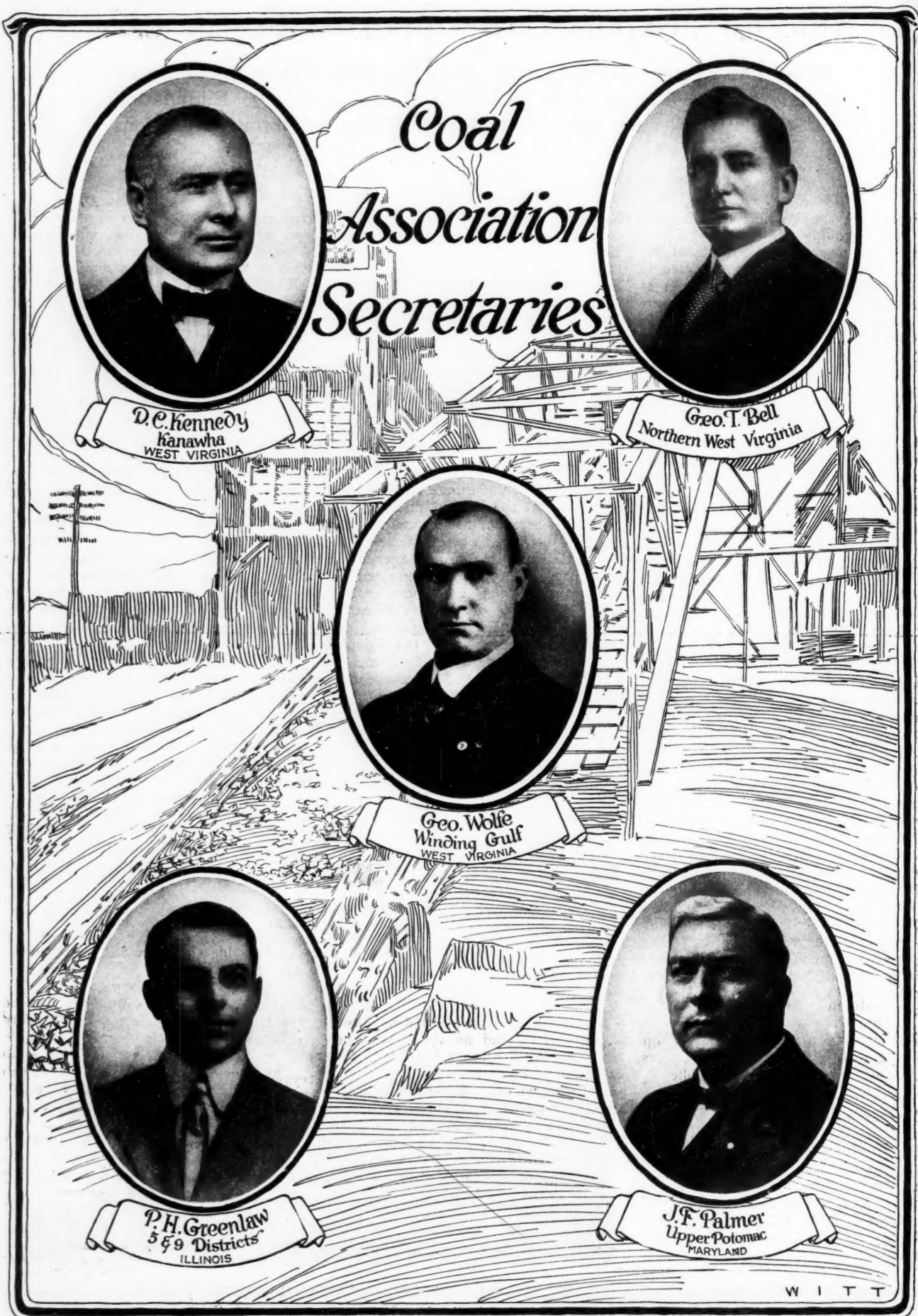
Photo by Galloway

CHARLESTON GROWS AS AN EXPORT CENTER

A view of the Southern Railway coal pier at Charleston. An important business in export and bunker coal is being built up at this port, to which is shipped coal from southwestern Virginia, Tennessee and southwestern Kentucky

*President, Andrade-Eyre, Inc.; president, Wholesale Coal Trade Association of New York.

*Coal
Association
Secretaries*



D. C. Kennedy
Kanawha
WEST VIRGINIA

Geo. T. Bell
Northern West Virginia

Geo. Wolfe
Winding Gulf
WEST VIRGINIA

P. H. Greenlaw
559 Districts
ILLINOIS

J. F. Palmer
Upper Potomac
MARYLAND

W I T T

American Coal Men Adopt Sellers' Market Methods to Export Coal in a Buyers' Market

With the Machinery and Incentive for Overseas Trade Americans Seek Large Profits, Overlooking the Opportunity to Encourage Foreign Industrial Expansion, Which Would Provide a Growing Market

BY GEORGE H. CUSHING

WITHOUT going tediously into the reasons or figures, we have an exportable or surplus productive capacity in bituminous of at least 100 million tons per year. Similarly begging the question, there is a foreign demand for at least 100 million tons of bituminous coal per year. Therefore we have a market and the coal to satisfy it. But are we equipped commercially to command our share of the trade? We have a very large desire to sell abroad, but there is a vast difference between having a desire to do a thing and being equipped to do it. I want to know whether we are so equipped.

It was only ten years ago that I proposed that we put an end to our dreaming about some day going into the export market and actually do it. As a feeler I proposed that we send some literature to foreign buyers to tell them what we had to sell. My recollection is that three firms offered to venture as much as \$100 apiece behind this venture. That didn't indicate that the trade was eager to translate its dreams into action.

I was told by shippers, bankers and everybody that we couldn't hope to do an elaborate export business until we had American ships. If we needed ships it seemed to me that the thing to do was to go get them, but first we must bring America around to the point of wanting a merchant marine. I carried my superheated appeal to some magazine editor friends in New York. They said that what I proposed was that the nation grant a subsidy to some ship-building and ship-operating companies, which would grow rich at public expense. In other words, America had in those days no imagination on exporting.

There was, however, a far more serious difficulty. I looked around among our citizens. Every man insisted that his business affairs should be so organized that he could be at home over the week-end. He might possibly consent to travel four or even five days out of the week, but he must be by his own fireside or club on Saturday and Sunday. The average American could not understand why an Englishman would ever consent to be away for eighteen months or two years in

some God-forsaken part of the earth. So we lacked the capacity to be uncomfortable while we put over a foreign trade. Furthermore, our national banks were not allowed to establish branches even at home. Certainly an American

trade, but are we equipped to win a commercial victory against competition?

I am not overstating the facts when I say that in six months the world coal situation has changed from a sellers' market to the beginning of a buyers' market. In a sellers' market we could easily distribute the 20,000,000 tons of coal a year which we could spare. All we had to do was to ship it to tidewater, and accept the money which the buyer was eager to pay us for it. But when we get into a buyers' market we face a vastly different situation; every sizable sale is the outcome of a fight. Victory goes to the man best equipped. I say and shall prove that we are not equipped for this impending struggle.

We have, it is true, a third of the fleet of the world. The foreign ship owners consider coal as a ballast proposition. Therefore they name a rate on coal which is a minimum. We, on the contrary, if we allocate a ship to the coal industry, insist upon getting a rate which practically insures the cost of operation for the round trip. When the Englishman is getting only the cost of operation or less on the outbound trip and when we try to get the cost of operation for the round trip, the American shipper finds himself out of line in the market and that his ships are out of sympathy with him.

The Englishman knows by long experience that when a ship ventures to sea it is likely to run out of coal before it returns to the home port. If it wants to operate cheaply, it must have an English coaling station at which it can get English coal at an English price. Therefore the Englishman has dotted the seas with English coaling stations. Furthermore, English coal concerns have learned to use the English coaling or bunkering stations as the key, as it were, of their coal merchandising policy.

We, on the contrary, have not begun to establish bunkering stations owned by American interests and supplied with American coal. The Shipping Board cannot establish such stations, because by a mandate of law it must as soon as practicable sell the ships and retire from the ship-operating busi-



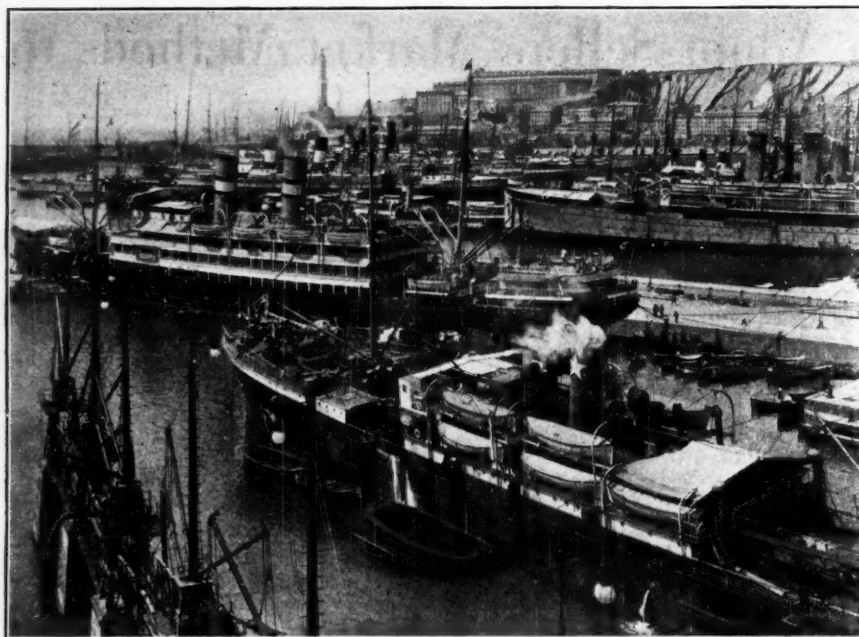
GEORGE H. CUSHING
Managing Director, American Wholesale Coal Association

bank was not allowed to establish a foreign branch.

INCENTIVES FOR FOREIGN COAL TRADE

For these reasons, we had no foreign trade in coal and no active sentiment for it. But ten years have brought a big change. Principally the war brought it. Today we have the ships. We have one-third the fleet of the world, which we have bought at a cost of three and a half billion dollars. These ships are manned in large part by American men because the Expeditionary Force taught the American youth to travel. We have today a great eagerness to sell coal abroad because for four years we have been making enormous profits on coal abroad, and we have foreign branches of American banks because it became necessary to establish them in order to simplify the matter of exchange.

These things give us the machinery and the incentive for a foreign coal



HARBOR AT GENOA, ITALY

Photo by Galloway

Genoa has become a familiar name to American exporters of coal in recent months. This photograph gives a view of but a section of the immense harbor to which so much of our coal has been shipped since 1915

ness. It cannot, therefore, establish bunkering stations because it does not know whether the people who will buy the ships will also want to buy the coaling stations.

Likewise the Shipping Board has not yet seen the importance of these bunkering stations. It has not, therefore, taken up with the State Department the matter of negotiating with other countries for the right to establish such bunkering stations. Finally, coal men, lacking any acceptable leadership, have done nothing toward the establishment of these bunkering stations. For these reasons we are going into the export market depending wholly upon the use of other people's facilities to handle our coal.

Before the war the Englishman considered the export market as a dumping ground for his surplus coal in order to maintain a good price on his coal sold at home. He was content, therefore, with a margin on his export coal of 2½ per cent on the turnover. He considered himself quite fortunate if he got better than 3 per cent. As late as 1914, I was told by the leading coal exporters of Great Britain, it was perfectly easy for them to sell coal in the foreign market at a cost of 2½ to 3c. a ton.

AMERICAN METHOD OF SELLING COAL

The American policy up to now has been to sell coal at home at a very low price and try to get all of our profit from the sale of our export tonnage. Before the war the average American idea was that our margin should be a minimum of 10 per cent on the turnover. After we got into the war and especially after the Fuel Administration was established, we got the idea that the American price plus \$1.35 a

ton was a proper price for our export coal. In other words, taking the home profit and the foreign profit into account, we had figured that our profits on export coal should be between \$1.50 and \$2 a ton as a minimum. Within the last six months our idea of profit has been enormously expanded.

With the Englishman satisfied with 2½ per cent and with the American considering 10 per cent as a minimum, we are in no position to compete in a buyers' market. Also when the Englishman considers the export market as a dumping place for his surplus and when the American considers it as the source of all his profit, we are in no position to meet competition.

EUROPEAN TRADE POLICIES

The Englishman and the German give other countries coal in order to encourage those other countries to produce something which England and Germany want. England gives foreign manufacturers cheap coal to give them cheap power, so that they can manufacture cheaply the things which England wants to merchandise. The American policy, on the other hand, has been and is to make coal abroad as expensive as possible. This means that the foreign user of American coal will have costly power and therefore little encouragement to build factories depending upon its use.

The next question is so enormous that I hesitate to enter upon it. Perhaps, however, I can simplify the subject in this fashion: Some four or five years ago, in a conference with New York bankers, I put the export coal business in this way: The producing and selling interests in coal are so diversified that it is impossible ever to hope to bring them to a focus in any

one organization, but there are middle functions which can be unified, such as the financing of sales, the chartering of vessels and the supplying of docks. One central organization could, to the pre-eminent advantage of the American trade, undertake these functions. They were quite sympathetic and announced their willingness to organize a syndicate to raise the necessary millions.

BANKERS REJECT PROFFERED PLAN

My idea was and is that the banking houses which have such enormous sums of money at their disposal must of necessity be interested in other commodities which we want to export. Thus through a common financial point of contact there would be worked out a harmonious program for coal and the other commodities. However, there is so little cohesiveness in the American coal trade and so little understanding of the interdependence of coal and other commodities that this idea was no sooner laid before coal men than it was instantly and flatly rejected. Every man preferred to go it alone in production, in sale, in financing, in chartering and in docking.

Nevertheless, when we try to sell coal abroad in a buyers' market we meet the competition of the English, who have gone far beyond mere central financing. The large financial interests of England finance the buyers of coal. In this way they can dictate that the coal shall be supplied by English companies, carried in English ships, handled over English docks, sold by English selling agencies and consumed by companies financed by corporations in Great Britain.

I am not going to impose upon the coal trade's patience long enough to go through the long category of things that we have left out of consideration. I think I have said enough to indicate that in all respects we have done exactly the opposite to what our competitors are doing. They are fitting their appeals to the needs and wishes of the other people. We ask the coal buyers of the world to consider our needs, our likes and our wishes. Our competitors have been selling coal, in other words. We have been allowing our customers to buy it. The policy of our competitors is fitted to the buyers' market. Our policy up to now has been fitted to a sellers' market. Our competitors from now on are going to succeed. The American from now on is going to fail.

COAL NEEDED AS EXPORT OUTLET

Our merchant marine is going to be a failure unless a certain percentage of the ships is constantly employed in the movement of coal.

The American coal business is going to be destroyed by the pressure of potentially excessive home production unless we have an export outlet.

Therefore, when I plead for a sound merchandising foreign policy, I plead at the same time for a stabilization of the industry at home and for the preservation of our merchant marine.

Testing the Links in the Transportation Chain

Shipment of Coal This Year Will Be Affected by Need of Cars to Move Accumulated Grain as Well as New Harvest—Depleted Stocks of Building Material Must Be Replenished—New Equipment Only Sufficient to Replace That Retired

BY JOHN CALLAHAN*

JUST as "trade follows the flag," so transportation waits on the consummation of commercial transactions. This is always affected and modified to the extent that labor disturbances and similar features affect production and transportation. What is generally said here must be regarded as subject, therefore, to any labor disturbances which may occur during the year 1921.

Generally speaking the adage "No chain is stronger than its weakest link" applies to transportation just as it applies to the chain. Much of the commerce of this country originates in the West, Central West and South, and moves east and north. Traffic originating in the West, Central West and some of that from the South, destined for the great northeastern consuming section of the United States and export tonnage moving from North Atlantic seaboard points, must necessarily travel through areas which likewise are heavy producers. The weakest links in the chain are the carriers in the Central and Trunk Line classification territory, for they must not only handle the large volume of freight originating west of Chicago but must likewise carry such commodities as fruits and vegetables originating in the South.

APPRAISING TRANSPORTATION

Any forecast of transportation conditions in 1921 therefore must be predicated on estimates of the probable rate of resumption of industrial and other activities and should take into account the probable status of each of the industries which normally require transportation in a large way.

In the western country today the elevators are all full of the 1919 crop of grain, and back of the elevators is the crop of 1920, still quite largely in possession of the farmers. Steps already are actively under way to finance the movement of this grain prior to the time when the 1921 crop will be harvested. It is believed that, even though the grain which is on hand may have to be sold at a reduced price, any failure to produce the customary cereal crop in 1921 will not entirely prevent some further surplus in the granaries and elevators of the West, unless in the near future there be a very considerable movement to market of that grain which is now being held.

In the lumber industry it is reported that the majority of retail yard stocks are not sufficiently assorted and that

for any resumption of building, even though of moderate proportions, there must be a considerable restocking of the local lumber yard. The consensus of opinion among those interested in that industry seems to be that buying will not wait much longer on price reductions. We are rapidly approaching the season of the year when building, especially of residences, must be begun if it is to be carried on at all.

The cement industry has been enjoying a breathing spell for some time, and, generally speaking, today the stock of cement in the manufacturers' warehouses is sufficient for but two months. The rate of production of cement, however, is expected to increase in the near future in some sections of the country.

COMPETITION FOR CARS LIKELY

It appears that efforts to dispose of stocks of general merchandise at prices higher than those which prevail at the present time were in many instances quite successful prior to the first of this year. Furthermore, sharp reductions in retail prices since the Christmas holidays have moved goods off the merchants' shelves and now merchandise must soon be had. This will add to the volume of freight.

Manufacturers generally today apparently are at the turn of the road and there is every indication that the bottom of depression has been reached and that business has a new and more hopeful frame of mind. Of the coal industry and the industries using raw steel this is not true. A general resumption of business is necessary in the majority of instances before the manufacturers of steel products and producers of soft coal may begin to function actively. Nor is this contradictory of the commonly-accepted truism that steel is the true barometer of business conditions. What is said of industries manufacturing articles of steel does not pertain to production of raw iron and steel.

RETIREMENTS EQUAL NEW EQUIPMENT

It is safe to assume, from present indications, that there will be a large increase in the demands on the railroads before many months have passed, especially in the Eastern section of the country. In speculating on whether the railroads can meet the demand it is well to remember that although the average daily mileage of freight cars has been increased 20 per cent, the average loading of cars has increased about 5 per cent, and the number of unserviceable locomotives considerably reduced since

the carriers were returned to their owners March 1, 1920, yet the new equipment which will ultimately be purchased for use on the railroads will enter service this year only in sufficient amount to take care of retirements due to obsolescence and destruction. We have more need for such additional facilities as second and third tracks and increased and improved terminals than for more cars. Nevertheless the need for new engines and cars is great and I would say no word to minimize its importance.

I doubt whether since the return of the carriers to their owners the railroad facilities of the country as a whole, including additions now authorized, have been increased more than 3 per cent. If present indications of a gradually-increasing demand on transportation be realized, car shortages may be expected before the middle of 1921, particularly in the East. It should be borne in mind, however, that there is today no such slackening in freight movement west of Chicago as exists in the East. The large movement of Lake coal and ore will begin in April as usual, and this must be considered in any forecast of the future.

SOURCE OF POSSIBLE CONGESTION

The indicated possibility of a transportation shortage in 1921 will become a fact if the weakest link, the railroad systems of the East, burdened not only by local freight but called on also to carry the production of other sections of the country, cannot carry the load. It is feared that the cross movements of coal and ore in the Lake trade will be the first signal for storms in transportation in 1921.

For a time demand for coal for local consumption and industrial use in the territories contiguous to those producing it probably will be at a minimum. Demand will increase, however, as the year goes on and other industries resume their normal activity and coal will be faced with a gradually-increasing shortage of transportation, reaching an acute stage soon after July 1.

On the last day of 1920 new prices were made by most dealers for delivery in St. Louis, as follows:

	New price.	Old price
Carterville	\$8.75	\$9.50
Duquoin	8.50	9.25
Mt. Olive	7.75	8.00
Standard	7.00	7.50
Gas house coke	11.75	15.50
Byproduct	12.50	15.25
Smokeless lump and egg ..	15.25	15.75
Anthracite nut and stove ..	17.40	17.40
Anthracite egg and grate ..	17.15	17.15

*Traffic manager, National Coal Association.

What Will Be the Production Goal of 1921?

Success of Remedial Steps Attests Correctness of Diagnosis of Coal Situation Last July — Experience Proves That Tardy Buying, Light Output and Inadequate Transportation Tend to Cause Coal Shortage—Emergency Measures Should Be Avoided in Fairness to All

BY D. E. SPANGLER* AND A. G. GUTHEIM†

WHEN the Interstate Commerce Commission, hearing protests against Service Order No. 7 early last July, sought to ascertain our probable bituminous coal requirements in the calendar year 1920, the estimates varied considerably. The figures mentioned went as low as 535,000,000 tons and as high as "probably 580,000,000 tons." Clearly, however, it seemed that the necessary production would not be obtained without weekly totals averaging 12,000,000 tons for two months, and 11,500,000 tons for another two months, making it possible for the third two months' period of the last half of 1920 to trail along at the rate of 10,000,000 tons weekly should the weather or other conditions limit production to that figure.

Service Order No. 7 was maintained in effect, with periodical modifications as conditions permitted, until Nov. 29, 1920, and while in effect was from time to time further modified by permit of the commission in individual instances. Its cancellation followed promptly upon the slump in business and the reduction in car shortage contemporaneously with a decided improvement in the coal situation by Thanksgiving Day. But even so, and with a marked decline in our overseas export movement, the country has continued to absorb with fair rapidity weekly outputs averaging well over twelve million tons up to Christmas Day. Thus far the bituminous mines have reported but little working time lost on account of no market and the railroads are holding relatively few unconsigned coal loads. Indications are that for the calendar year 1920 bituminous production will total somewhat over 550,000,000 tons.

Seemingly the situation was accurately sized up in July last. The remedial steps taken have justified themselves. The danger looming ahead for the then coming autumn and winter has been avoided. But it is not to be forgotten that particularly favorable fall weather was a factor of material assistance. All this, however, is water over the dam, and the mills of industry will no more run with coal already burned than with the water already past.

What, then, of 1921?

If the experience of the last two years has taught anything it should be that slow purchasing by the public, light production due to strikes of miners, or

short transportation due to strikes of railroad men, all produce the same result: a shortage of coal. That experience has shown also that while transportation may be so distributed as to make up a bituminous coal shortage, this can be accomplished only under the emergency provisions of the Interstate Commerce Act and at the expense of other traffic. Fairness to all interests requires that action of this nature be avoided if at all possible.

In the present rather unsettled state of business it is difficult to forecast bituminous requirements in 1921. There are many who are well informed on the subject, however, who feel that the United States is now beyond the period of 500,000,000 tons per annum figures, and that for the future we must work toward a basis of 550,000,000 tons. This

will require much more effective co-ordination of production, transportation and purchase and distribution than has been had in the past, and this is especially so because of the greatly increased and constantly growing demand by other commodities for what are commonly called coal cars.

There is little known of the actual extent of our bituminous coal stocks today and still less of the distribution of those stocks. Whether we are traveling on a margin of safety or one of some danger is a question. It behooves everyone to keep in mind what we have passed through since 1915 and to do what he can to effect such co-ordination of production, transportation and purchase and distribution as will avoid any repetition of our unfortunate experiences of the past five years.

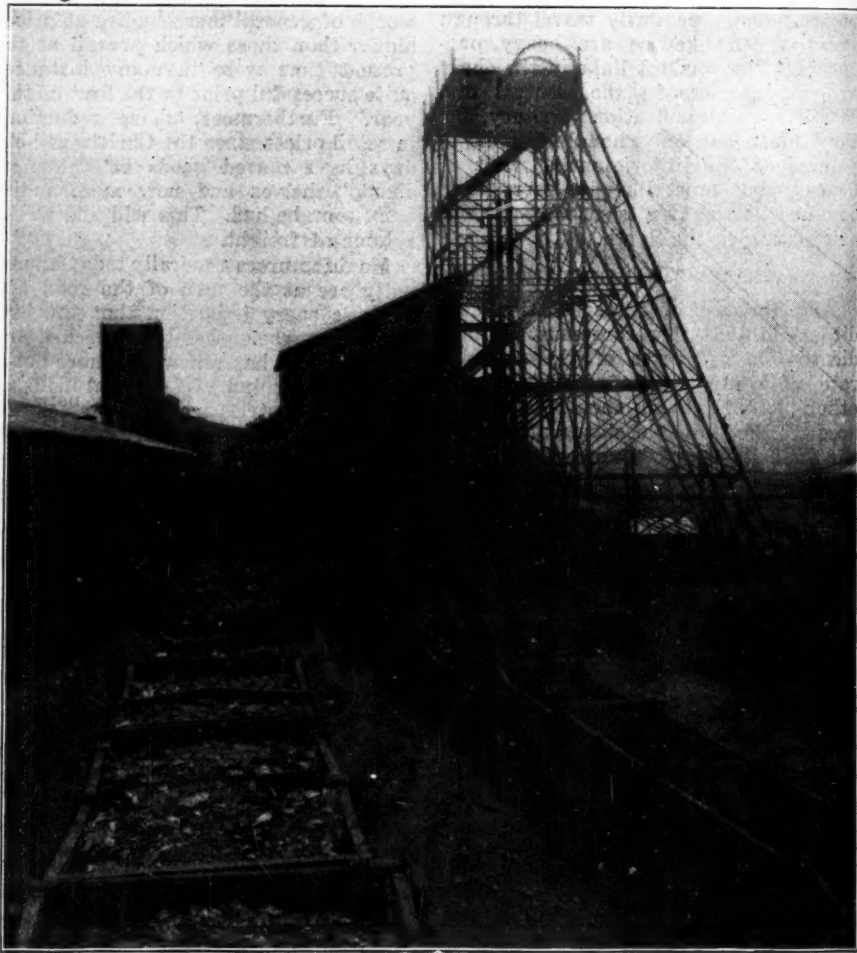


Photo by Underwood & Underwood

MINE-RUN ANTHRACITE READY FOR THE BREAKER

A huge steel tippie at one of the large anthracite mines, with a long string of loaded mine cars ready for the breaker. The run of mine coal shown in the cars is crushed and sized before it becomes the stove, egg and nut of commerce.

*Manager, Open-Top Section, Car-Service Division, American Railway Association.

†Manager, Public-Relations Section, Car-Service Division, American Railway Association.

More Facts About Coal Are Needed

Parallel Interests of Coal Industry and the Public Require Better Record of Distribution and Consumption — Knowledge of Current Supply and Demand Helpful in Emergency — Wasters More Culpable Than Profiteers

BY GEORGE OTIS SMITH*

A MEASURE of the well-being of the United States during the year 1921 will be afforded by the country's consumption of raw materials and energy. Productive industry is the life of the nation, and symptoms of national health or disease can be detected in the degree of current activity of a few basic industries. Hence increasing attention is being given in financial journals to statistical indexes and "barometric" curves; the ups and downs of business life must be kept charted up to date.

The relation of the U. S. Geological Survey to the everyday life of this busy nation has been a matter of evolution. Forty years ago this new scientific service administered the mineral-industry part of the Tenth Census, and each succeeding year it has collected the figures of annual mineral production, thus having the advantage of continued contact with a rapidly growing industry. More and more the Survey has endeavored to make its annual report "Mineral Resources" not merely a compilation of statistical returns of mineral output but an inventory of available resources and of productive capacity—a statement showing not simply what this industry contributed last year to the nation's business but what it can contribute next year. The aim of the Geological Survey from the first has been to inform the American people as to the elements of their national wealth, so far as these elements are in the form of mineral resources.

But in forty years times have changed, and in 1921 the mineral industry bulks large in the life of the country. In less than thirty years the increase in output of bituminous coal has been fivefold as compared with a twofold increase of all raw materials. The mineral fuels have come to have a hardly less prominent place in the daily requirements of the people than flour and milk and sugar. Shut down our coal mines and almost immediately the whole country becomes not only cold but idle and hungry. Under these conditions mineral statistics are not so much data for future economic study as a guide for present action. Certain industries, like the coal industry and the oil industry, are so essential to public well-being that their statistics of production and consumption are like weather charts—as a matter of national safety it is necessary to detect country-wide disturbances in advance, if possible, or at least at the time of their

inception. So it is that timeliness in the collection of mineral statistics and prompt publicity have become recognized as of first importance.

This giving of news value to statistics is only another way of saying that up-to-date statistics possess general usefulness. The weekly coal report issued by the U. S. Geological Survey is perhaps the best example of the kind of statistical service that government owes its people. Begun during the war, when the whole industrial machine was being speeded up to carry an ever-increasing peak load, this weekly statement of coal production performs a no less valuable function in time of peace. The years 1919 and 1920 had their critical periods as well as 1917 and 1918, and at no time has there been any surplus of authoritative information regarding the true situation. The public needs more coal facts.

COAL EDUCATION NECESSARY

The increasing complexity of the industrial life of our country precludes any government bureau from being content with either the scope of its investigations or the quality of the information it furnishes to the public concerning so essential a resource as coal. The fuel problem is ever critical, and the people need education in every phase of it. Price wins first place in the headline treatment of coal news, but supply is the more vital phase; hence it is interesting to note that the weekly coal reports and the monthly petroleum reports by the U. S. Geological Survey do not contain the dollar sign. The interrelation of prices and supply and demand is recognized by all, but the ton is a more significant unit than the dollar for use in planning against any interference with industrial health and domestic comfort.

The increased service that the Geological Survey owes to the coal industry and to the general public—and be it ever remembered, their interests are parallel, not opposed—includes first of all a better record of coal distribution and consumption. A monthly record of all the major movements of coal—coastwise and export, lake and river, through the rail gateways—could be made up from scattered sources of information supplemented by a few new "gaging stations." This record of the progress of coal from mine mouth to market would afford a picture of the current supply and demand that would be helpful alike to mine operator, traffic manager and coal consumer; it would be information of the kind that is indispen-

sable to public guidance of industry either in time of emergency or in the ordinary course of business.

Another public need is a quarterly inventory of the reserves of coal above ground—a stock report based on returns from a selected list of representative larger consumers. Such a report, issued by a disinterested and therefore impartial government agency, should serve to guide the general public in making coal contracts and, by giving advance warnings of shortage or overproduction, should tend to lessen speculation and to stabilize prices. This service would not be an experiment, as one canvass of stocks in the hands of 5,500 representative producers has already been made—in 1920 at the request of the Bituminous Coal Commission—and its cost was insignificant compared with the value of the definite information it disclosed as to the inadequate stocks on hand June 1, last.

Still more facts are needed in the public interest; but this method of keeping an official finger on the pulse of the coal industry has already detected certain major causes of its defective functioning. Impaired circulation seems to be the chief ailment—with mines and mine workers largely in excess of any possible annual demand, transportation is usually the limiting factor in the production of bituminous coal. Not more mines but more cars are needed, and yet in every period of speculative prices the tendency is to open new mines rather than to build new cars.

More facts are needed as to mine costs, and in a time like the present, when everyone who touches coal is under public suspicion, it would be a great advantage to the large majority of operators and dealers if the facts as to increases in costs had been officially determined and publicly known. It would be preferable to have all the essential information relating to the quantity of coal produced and distributed, and the costs of mining and distributing it collected by Federal agencies with the hearty co-operation of those engaged in the industry; but if the mutual need of publicity is not appreciated or the rights of the public fully recognized, any compulsory measures to protect the public interest are warranted—the facts must be available as they are needed.

Nor is this all that must be done in the public interest. The consumer becomes excited about changes of 10 or 20 per cent in the price of coal, but he is relatively quiet about equally great variations in its quality, and he shuts

*Director, U. S. Geological Survey.

his eyes to the greater losses of coal value that are within his own control. If a news item tells of the sinking of fifty tons of pig tin in New York Harbor, we realize a loss of material wealth, yet several times fifty tons of wasted heat units go up the stacks of every industrial city every working hour, unseen and unheeded by those who pay for that coal. Profiteering in the use of an essential resource like coal is as culpable as profiteering in its sale.

The task of teaching the public how

to use the coal it buys and the problem of so standardizing the coal that is to be marketed that the consumers may know the quality as well as the price of the coal they buy—these are other services that must be rendered by the government in the public interest. Here again such Federal activity would not be experimental, for a beginning has been made by the Bureau of Mines, and a larger program has been clearly outlined. Increased activity by these two bureaus of the Department of the Interior—the Bureau of Mines and the

Geological Survey—is plainly a more reasonable and effective way to serve both coal producers and coal consumers than any radical project of regulating prices without striking at the causes of high cost and of excessive waste.

More facts are needed, and the public should make larger use of the information already available. A campaign of education is better than a campaign of prosecution—more of us are ignorant than are guilty. Many millions of us need to be informed, and at most only a few thousand ought to be indicted.

National Aspects of the Coal Industry

Unsettled Conditions of Last Year Brought Recognition of Basic Importance of Coal—Rise in Mining Costs and Price of Fuel an Incentive to Care and Use of Improved Equipment—Bureau of Mines Encouraging Efficiency

By E. A. HOLBROOK*

PERHAPS the most outstanding feature in the coal industry during the past year has been the universal recognition of the absolute dependence of the whole country on coal as the keystone of present industrial and home life. So long as coal could be had cheaply whenever desired, the details of its mining, preparation, transportation and selling were of interest only to the trade. Even during the war it was felt that the derangement of pre-war conditions of general oversupply was only temporary.

However, the continued undersupply at major points of consumption and the unheard-of prices, affecting directly almost every individual in the country, have combined to make coal the most discussed of necessary commodities. This has been strikingly evidenced to the Bureau of Mines in the number and character of letters received asking for information. While the number asking for information on the technical points of mining has not decreased, the number asking for information on the economic aspects of the coal industry have markedly increased.

The separate components which when assembled make up the whole coal situation are mine operation, coal preparation, transportation, marketing and utilization. Because of its broad organic law covering these points and its non-partisan character the Bureau is often able to review these separate and necessary components, to correlate them and to broadly gauge their trend. Thus to the consumer the questions of importance concern impurities, kinds of coal adapted for particular uses, and small percentage savings by reason of better equipment. These questions were largely of academic interest when coal cost less than a dollar a ton at the mouth of the mine. Now, however, the continued higher price level is bringing out many devices and schemes to save fuel, is causing the larger plants to em-

ploy technically-trained combustion engineers and is stimulating real interest in devices and ways to save fuel that are already on the market.

In the aggregate and if continued over a period of time this condition will bring reaction in the coal-producing industry, not because it will be possible generally to substitute other fuel for coal but because it will tend to put into effect the 15 to 40 per cent savings in fuel that are possible at most boiler plants, including house-heating devices, by the exercise of proper care and the use of improved equipment. For this reason, over a course of years high price will surely lessen relative demand.

NUMEROUS SUBSTITUTES APPEAR

The high price and scarcity of coal have also been responsible for the appearance of a great crop of substitute fuels and processes, many of them with considerable technical merit. The coal industry, however, should not overlook that the real test of a substitute or artificially-prepared fuel is not always its technical merit, but rather whether the cost of producing the new fuel is low enough per ton to admit its commercial competition with natural coal under present and prospective prices. In any case the margin between profit and loss is not great and the production of an artificially-prepared fuel must be considered as a competitive business rather than as a development of an invention having before it a clear field.

There are immense high-grade coal areas in the United States still untouched, and until their possibilities have been fully developed, coal in its natural state must necessarily continue to be the chief fuel of the country. However, the use of raw bituminous coal in our great cities is rapidly approaching the point where it becomes a nuisance and a possible menace. Here, for reasons other than cheapness, a smokeless prepared fuel of reasonable price awaits a ready market.

The public has been educated as never

before to the advantages of buying and stocking coal in the seasons of small demand and oversupply. At times this is a money-saving operation; in every case it is an insurance against shutdown and uncertainty during the periods of greatest demand. In spite of local opinion to the contrary, practically every kind of coal can be stored, providing those in charge have the full available information and knowledge of the storage problem and see that their orders are strictly carried out.

In the actual operations of mining coal each year sees real progress. The safety-first movement, which ten years ago was largely humanitarian in character, has become a commercial necessity. No work is projected or carried out, no methods are put into use, no machinery installed, without considering the real test: Is it safe? Practical cost and technical excellence must take second place to safety qualities.

There are, however, such continual changes in the methods and machinery of coal mining that continual investigation of the new hazards and formulation of rules safeguarding them are necessary. For example, electricity, which seemed ten years ago to have reached in mines a high state of use and development, is today spreading in use and in usefulness in mines as never before. The simple rules and regulations formulated to safeguard its use ten years ago are today inadequate and possibly hazardous in the great modern fully-electrified operation. Continual study of new conditions must be made and recommendations offered. The problems are complex and do not admit of a sudden snap judgment or opinion on the part of any of the interested parties. Rather, long-continued observation and compilation of data, as the use of electricity underground becomes more complex, are the only safe guides in controlling its hazards.

Never before have such earnest efforts been made to perfect mechanical underground loading devices for coal

*Assistant director, U. S. Bureau of Mines.

mines. There is no doubt that the continual upward trend in the cost of mining coal will greatly stimulate the development and introduction of mechanical mining and loading devices. As in other industries where machinery has replaced hand labor, this will not mean a decrease in the number of men employed but rather a change of their duties, and probably will bring about in turn a new cycle of lessened costs and a large increase in the amount of coal mined.

With all these and other movements in the industry the Bureau of Mines endeavors to keep in touch, to co-operate, and to assist. It possesses and desires no police powers; rather it is the one agency in touch with coal mining in every state, and through investigation and research and by reason of its contact with the many different mines and conditions it is able to point out what are believed to be the best practices and to give direct co-operation where it is asked for.

Of particular interest to the readers

of *Coal Age* is the fact that the Bureau during the past year has noted in the coal industry a great and unprecedented demand for and absorption of technically-trained men. While this is partly accounted for by the general prosperity of the industry, it is doubtless of deeper significance. The increasing size and depths of the mines, the greater use of machinery and the increased price of available coal acreage all necessitate the employment of men who have special training and knowledge. I believe that the coal-mining industry today, both in the operating and business ends, offers unusual opportunity and advancement to the man willing to supplement his practical knowledge and experience with special training.

The developments in coal preparation should not be overlooked. With a return to normal the public, now becoming educated in regard to coal, is going to demand clean, well-prepared coal. The increasing freight rates further act as a deterrent to shipping low-grade

or high-ash coals. Knowledge of the impurity sulphur, its effect in coal and coke and the possibilities of its removal have attracted attention as never before. Coal-washing, if the price of coal keeps at or near its present level, will see a development in processes and use during the next ten years comparable only with the progress made in its sister art of ore-dressing during the past ten years.

To repeat, coal has become a matter of prime national as well as of local interest. As such I believe the investigations of the Bureau of Mines are increasingly important. The Bureau is working directly with the coal industry, endeavoring to stimulate safety, economy and efficiency—it is not engaged, as an agency with police powers would be, in matters of a controversial nature—so that the new year may be expected to be one of continued constructive effort on the part of the Bureau of Mines with the continued co-operation of miners, officials and the industry at large.

Problems and Accomplishments of Retailers in 1920

Efforts of National Retail Merchants Association to Prevent Government Control of Coal Trade Interfered with Contemplated Constructive Work—In Sympathy with I.C.C. Regulations—Education in Cost Accounting and Closer Relations with Railroads and Government Bodies Foreseen

BY ELLERY GORDON*

A CROWDED year 1921. So far as the retail coal trade is concerned, we have had crowded into one year everything which might normally happen to us in the course of ten years. We have had increased mine prices, increased freight rates, increased retail wages and expenses, transportation difficulties, strikes, shortages, high prices, governmental investigations, grand-jury indictments, state-control laws, and a national election.

Since the armistice most of our attention has of necessity been devoted to defensive measures against various governmental regulations either threatened or imposed, and we have not been able to continue the constructive work for the trade in which it is the function of our associations to take the lead.

CAR SUPPLY OUTSTANDING FACTOR

From the beginning of the year it was apparent that the greatest factor in the production and distribution of coal was to be one of car supply and transportation. The advisability of conducting a nationwide campaign to urge early buying of coal was discussed together with the establishment of seasonal coal prices and freight rates as an encouragement. It was decided that such a campaign would be of questionable wisdom, and later events fully justified this decision.

*Secretary-manager, National Retail Coal Merchants Association.



As far as retail trade was concerned, although our orders were placed, we did not feel any alarm over the failure to ship until pressure by our customers and the knowledge that large industrial plants were bidding for our coal forced us to swing to a large extent with the market. This was particularly true of bituminous in the early summer.

The absolute inability of the coal trade legally or effectively to agree on

a united plan of distribution, so that New England and the Northwest would be insured of their tonnage in time to avoid disaster, brought about a demand for a Fuel Administrator. The leaders of the coal trade, however, succeeded in averting such a grave mistake on the part of the government. It was immediate action that was needed and there was no machinery ready nor was there time to set any up.

COMMERCE COMMISSION TAKES HOLD

At this point the Interstate Commerce Commission with encouragement from the railroad association and the leading coal organizations, declared an emergency and took charge under the Transportation Act of 1920.

Its first steps were the issuance of priorities for New England and the Northwest, with specific daily shipments provided; the issuance of orders intended to force prompt unloading by consignees, and orders permitting the assignment of cars for loading for preferred consumers, such as public utilities. The National Retail Coal Merchants Association immediately announced its sympathy with the purpose of all these orders and took steps to co-operate in every reasonable manner.

It was during July that the greatest confusion seemed to exist and it was apparent that the entire country was in the midst of a coal panic. Prices were, of course, abnormal, particularly

for bituminous. The peak of the anthracite demand had not yet been reached. These conditions were, of course, brought about largely by the shortage of transportation facilities, emphasized at certain destination points by local railroad strikes.

Production increased steadily during the fall, as it always does, until it reached a peak during the early winter weeks—it has relieved the bituminous situation with the exception of a few scattered points. Recognizing, however, that there were acute shortages in certain localities, arrangements were made whereby the National Retail Coal Merchants Association could, through the National Coal Association, obtain shipments to those retailers who were suffering. Relief was thus afforded at points in various sections of the country, notably Ohio, Missouri and Illinois. At the same time local associations, such as the Chicago Coal Merchants Association, made similar co-operative arrangements with the operators and gradually the distribution inequalities were to a large extent cleared up.

The crisis in the anthracite situation did not come to a head until about the time when bituminous was quieting down. Bituminous prices receded immediately after the action of the operators in response to the demand of Attorney-General Palmer, although this action probably had less real effect upon the market than did the gradually increased production and the improvement in transportation.

The panic demand for anthracite during the last few weeks has been to some extent assuaged by very good production, and the Department of Justice has again, seconded by Mr. Calder, forced the organization of anthracite operators to take action with regard to prices. As

a result, the market has declined, although there is some high-priced coal still running.

From the retailers' standpoint the unfortunate result of the extremely high market has been the criticism heaped upon the retail trade when we have been obliged to increase our prices in accordance with the prices we had to pay, and the losses we were obliged to take where we did not think it wise to increase our prices in accordance with the increased costs. It has been surprising to find a considerable element among the retail branch of the trade which is not so violently opposed to government control as it was some months ago.

RETAILER HARRIED ON ALL SIDES

The retailer has been subjected not only to indifference in the matter of shipments on his contracts, to say nothing of shipments where contracts have never been the rule and moral obligations should have been recognized, but he has been subjected also to public criticism, and in only a few instances where the local retail organizations were most efficient have they succeeded in convincing the public that the exceedingly high prices are not the result of unconscionable profiteering on his part.

As in the case of bituminous, the National Association has called the attention of the anthracite operators and shippers to dozens of cases where the retailers' tonnage had fallen behind even last year's tonnage, which is not a fair measure. In some cases shippers have responded but in a larger number of cases there has been an apparent indifference.

There is now, for the first time, so far as we know, a joint coal trade committee, representing producers, whole-

salers and retailers. This committee has held several meetings at which problems of the coal trade were discussed, and if these problems are properly solved it will be a great benefit to the consumer as well as the coal trade. The formation and activities of this general committee are distinctly in the public interest.

To summarize, our activities in 1920 were largely governed by the developments of the general market, with the exception of the groundwork for cost accounting activities and the continuation of efforts to bring about a resizing of anthracite. The advantages to the individual retailers through our activities in connection with the developments of the summer and autumn are too apparent to require enumeration.

The writer believes that we are now at a point where we can look to the future for constructive work with less byplay on account of the after-effects of the great war. For the National Association and its affiliations he can see the actual national enforcement of the uniform claim rules and the establishment of collection service among all the state and local organizations. He can see an aggressive and progressive campaign with no expiration limit as to time, having for its purpose the education of the entire trade in proper cost-accounting methods. He can see the successful continuation of our relations with the railroads and governmental bodies in furtherance of public interest. He can see the development of an information service in a statistical way that will be of benefit to the individual retailer, which is an absolute necessity to his organization.

Last, but not least, he hopes for a practical recognition of the necessity for proper financing of retail organizations.

Coal-Mine Fatalities in 1920 Shrink 7 Per Cent, Although Output Is 16 Per Cent Greater*

BY W. W. ADAMS†

REPORTS received by the U. S. Bureau of Mines from state mine inspectors indicate a reduction of about 7 per cent in the number of coal-mine fatalities during the first eleven months of 1920 as compared with the corresponding period of the previous year.

The figures show that the number of lives lost was 1,983, a decrease of 163 from the 11-month record of 1919. This reduction in the number of fatalities is particularly gratifying because it was accompanied by an increase of about 16 per cent in the output of coal. Preliminary figures published by the U. S. Geological Survey show that the production of coal from January to November, 1920, was approximately 585,000,000 tons, about 84,000,000 tons more than

was produced during the first eleven months of 1919. The fatality rate in 1920 was 3.39 per million tons mined and 4.28 per million tons in 1919.

JUDGING ON WORKING-TIME BASIS

Complete information is not available to show the number of men employed in coal mining either in 1919 or 1920. However, if we use the record for 1918 as a basis, we may estimate the total number of days of labor performed by all employees in 1919 and 1920, which represents the period of time during which the employees were exposed to the hazards of mining. Such an estimate enables one to judge, with a reasonable degree of accuracy, the fatality rates for the past two years on a uniform working-time basis.

For 1918 the record shows that 762,426 employees performed 196,491,984

days of labor and produced 678,211,904 tons of coal, a daily average of 3.45 tons per man. Assuming that the individual daily output has not fallen below this record, the production figures for the last two years show that the total working time during the calendar years 1919 and 1920 was, roughly speaking, equivalent to 158,000,000 man-days and 187,000,000 man-days, respectively.

Based upon the number of full-time (300-day) workers, therefore, the fatality rate per thousand employees was 3.94 in 1918, and is estimated at 4.39 for 1919 and 3.29 for 1920.

Considered by causes the most notable decrease in fatalities was in the number due to explosives. This class of accidents showed a reduction of about 44 per cent. There also was a gratifying decrease in the number killed in explosions of gas and coal dust.

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†Statistician, U. S. Bureau of Mines.

Practically no change occurred in fatalities due to falls of roof and coal, or to the use of underground haulage. Surface accidents caused by mine cars and locomotives and railway cars decreased about 19 per cent.

FATALITIES IN COAL MINES IN UNITED STATES, ELEVEN MONTHS ENDED NOV. 30, 1919 AND 1920
UNDERGROUND

	Killed	
	1919	1920
Falls of roof, (coal, rock, etc.):		
At working face.....	607	504
In room or chamber.....	107	188
On road, entry, or gangway.....	152	167
On slope.....	11	10
Fall of face or pillar coal:		
At working face.....	116	104
On road, entry or gangway.....	22	27
Mine cars and locomotives:		
Switching and spragging.....	10	7
Coupling cars.....	4	11
Falling from trips.....	17	28
Run over by car or motor.....	139	137
Caught between car and rib.....	100	89
Caught between car and roof while riding.....	22	15
Runaway car or trip.....	37	33
Miscellaneous.....	26	33
Gas explosions and burning gas:		
Due to open light.....	63	59
Due to defective safety lamps.....	22	7
Due to electric arc.....	19	10
Due to shot.....	6	11
Due to explosions of powder.....	2	11
Miscellaneous.....	28	18
Coal-dust explosions (including gas and dust combined):		
Due to open light.....	22	3
Due to defective safety lamps.....	..	..
Due to electric arc.....	..	..
Due to shot.....	13	17
Due to explosions of powder.....	1	5
Miscellaneous.....	..	1
Explosives:		
Transportation.....	96	5
Charging.....	14	6
Suffocation.....	3	4
Drilling into old holes.....	..	3
Striking in loose rock or coal.....	..	..
Thawing.....	..	..
Caps, detonators, etc.....	3	4
Unattended shots.....	2	2
Returned too soon.....	5	8
Premature shot.....	49	47
Sparks from match, lamp or candle.....	7	7
De'aved blast.....	2	9
Shot breaking through rib or pillar.....	6	1
Miscellaneous.....	10	14
Suffocation from mine gases.....	11	16
Electricity:		
Direct contact with trolley wire.....	37	26
Bar or tool striking trolley wire.....	2	3
Contact with mining machine.....	4	11
Contact with machine feed wire.....	12	9
Contact with haulage motor.....	2	3
Miscellaneous.....	8	16
Animals.....	2	5
Mining machines (other than 8c).....	25	36
Mine fires (burned, suffocated, etc.).....	22	a 1
Other causes:		
Fall of person.....	4	2
Machinery (other than 10).....	3	2
Rush of coal or gob.....	14	7
Falling timber.....	20	7
Suffocation in chutes.....	2	5
Hand tools, axes, bars, etc.....	..	..
Nails, splinters, etc.....	1	..
Miscellaneous.....	18	10

IN SHAFT

Falling down shafts or slopes.....	20	23
Objects falling down shafts or slopes.....	6	8
Cage, skip or bucket:		
Runaway.....	8	7
Riding with rock or coal.....	1	2
Riding with timber or tools.....	2	..
Struck by.....	4	4
Miscellaneous.....	5	2
Other causes:		
Overwinding.....	..	..
Breaking of cables.....	..	..
Miscellaneous.....	2	4

SURFACE

Mine cars and mine locomotives.....	64	47
Electricity.....	10	17
Machinery.....	20	20
Boiler explosions or bursting steam pipes.....	5	4
Railway cars and locomotives.....	19	20
Other causes:		
Explosives.....	1	12
Fall of person.....	15	12
Falling objects (derricks, booms, etc.).....	7	7
Suffocation in chute, bin or culm.....	3	5
Falls or slides of rock or coal.....	10	5
Steam shovels.....	1	..
Hand tools.....	1	..
Miscellaneous.....	12	20

Grand total..... 2,146 1,983

(a) Six additional fatalities by mine fire occurred Nov. 16 at Earling on, Ky. Reports from Kentucky are incomplete.

Of the total number of deaths resulting from explosions of gas and coal dust, 123 were reported in sufficient detail to show the specific causes of the accidents. Of the latter number, 50 per cent were caused by open lights, 23 per cent were due to shots, and 13 per cent resulted from explosions of powder. The electric arc was responsible for 8 per cent and about 6 per cent were reported as having been due to defective safety lamps.

PERCENTAGE OF FATALITIES DUE TO GAS AND COAL DUST EXPLOSIONS, JANUARY TO NOVEMBER, 1919 AND 1920

	1919	1920
Due to open light.....	57.5	50.4
Due to defective safety lamp.....	14.9	5.7
Due to electric arc.....	12.8	8.1
Due to shot.....	12.8	22.8
Due to explosions of powder.....	2.0	13.0
Totals.....	100.0	100.0

Concerning fifty-two fatalities due to electricity, 50 per cent were caused by direct contact with trolley wires and 21 per cent by contact with mining machines. Seventeen per cent were caused by contact with machine feed wires. Less than 6 per cent each were caused by bars or tools striking trolley wires and by contact with haulage motors.

PERCENTAGE OF FATALITIES DUE TO ELECTRICITY, JANUARY TO NOVEMBER, 1919 AND 1920.

	1919	1920
Direct contact with trolley wire.....	64.9	50.0
Bar or tool striking trolley wire.....	3.5	5.8
Contact with mining machine.....	7.0	21.1
Contact with machine feed wire.....	21.1	17.3
Contact with haulage motor.....	3.5	5.8
Totals.....	100.0	100.0

Accidents caused by underground haulage equipment resulted in the death of 353 men, or two less than the number thus killed in the first 11-month period of 1919. Of these accidents, sufficient information concerning 320 of them was received to show the percentage due to each cause, according to the following table, which also gives comparative figures for 1919:

PERCENTAGE OF FATALITIES DUE TO MINE CARS AND LOCOMOTIVES UNDERGROUND, JANUARY TO NOVEMBER, 1919 AND 1920.

	1919	1920
Switching and spragging.....	3.0	2.2
Coupling cars.....	1.2	3.5
Falling from trips.....	5.2	8.6
Run over by car or motor.....	42.3	42.9
Caught between car and rib.....	30.4	27.8
Caught between car and roof while riding.....	6.7	4.7
Runaway car or trip.....	11.2	10.3
Totals.....	100.0	100.0

The principal mine disasters reported in 1920 were: April 14, Dawson mines Nos. 1 and 6, Dawson, N. M., dust explosion, 5 killed; May 3, Submarine mine, Clinton, Ind., gas explosion, 5 killed; June 2, Ontario mine, Cokeburg, Pa., gas explosion, 6 killed; July 19, Union mine, Renton, Pa., gas explosion, 9 killed; July 26, No. 6 mine, Sublet, Wyo., explosion of powder magazine, 8 killed; August 21, No. 19 mine, Deggan, Okla., gas explosion, 10 killed; November 16, Arnold mine, Earlington, Ky., mine fire, 6 killed; November 23, Parrish mine, Parrish, Ala., gas explosion, 12 killed. These eight disasters resulted in the death of 61 men, as compared with nine similar disasters in 1919 which caused the death of 201 men.

New York Retail Industry Organically Sound

Shortage of Supply in 1920 Coupled with Investigations and Threat of Government Control Made the Coal Dealer's Lot Precarious—Turning Point Has Been Reached

BY ARTHUR F. RICE*

DURING the year the retail coal trade had almost everything handed to it excepting enough coal to do business with. The preparation of certain coals has been—and still is—something not to be mentioned in polite society, and the absolute shortage in shipments, very little coal being weighed at the tidewater ports and everything lost or stolen in transit coming directly out of the pockets of the retailers, caused no end of trouble and financial loss. The degradation item, even after the small sizes screened out have been reclaimed, is another feature of cost of which the public know nothing, but which helps to put red figures on the retailers' books.

Overhead expenses did not decrease and smaller tonnages correspondingly reduced profits, so that in spite of abnormally high prices, the retail coal merchant did not profit thereby even to a reasonable extent.

As if these difficulties were not sufficient, there have been investigations

of one sort or another into the retailer's business; he has been put under suspicion of profiteering. In some cases his books were seized. The newspapers have been full of rumors as to his probable fate and grave and reverend Senators have arrived at the conclusion that he should be put under government control. Certainly if there were no prospect of an improvement in his affairs the lot of the man who puts his time and money into the retail coal business would not be a happy one.

Fortunately, however, there is reason for believing that the turning point has been reached and that a return to something like a normal state of affairs may be expected in the not distant future.

Granting as a rule, although it does not hold in all cases, that the operating costs of the individual producers are higher than those of the companies and that they are entitled to a differential, such as was granted by the Fuel Administration, I have never found anyone who could satisfactorily explain why this differential should amount to

*Commissioner of the Coal Merchants Association of New York City.

\$5 or \$6 per ton, as was the case for some months. It has worked a great hardship upon the dealers, especially those dependent upon the individual shippers for their supply.

Consumers, in their anxiety to keep warm, are not saying much about prices now, but later on, when they can afford to discriminate, they are not going to forget what, in their ignorance of the facts, looked to them like extortion. It is an absolutely uneconomic condition which cannot last; but if it should continue much longer, it is apparent to every thinking man that the government will step in and regulate the coal industry out of hand.

We may confidently expect that when the wide price differences between individual and company coals are in a large measure equalized, when the mines operate on full time and labor becomes more plentiful and efficient—and possibly cheaper—the old basis on which the dealer was enabled to figure his selling price will again prevail. It is likely, too, that the policy, which was allowed to lapse last year, of re-

ducing the wholesale prices 50c. in the spring will be restored.

As to the investigations into the anthracite business, which have been much in evidence of late and seem to be gathering momentum in certain directions, the retail trade need feel little apprehension. We have already come through several such experiences unscathed, for the very good reason that we have had nothing to conceal. Whenever there has been doubt as to which way we should go we have taken the safe path. By the continuance of that policy we shall neither frequent the courts nor languish in jail. There are fewer dealers here in proportion to the tonnage handled than anywhere else in the country, which is a matter worth thinking about. The business is an absolutely essential one, even if not always thoroughly popular. It may have a headache or a stomach ache once in a while, and has a slight nervous spell now, but its heart and lungs seem to be all right, and I believe we need not worry about its ultimate complete recovery.

service rendered by the Tidewater wholesaler, we were successful in obtaining from the Fuel Administration a ruling that resulted in the fixing of margins in New York, New Jersey and the New England States ranging from 20 to 35c. per ton instead of the previously fixed 15c. On the tonnage handled to the destinations covered by these allowances many tens of thousands dollars went into the hands of members of the trade to help defray the extraordinary expenses under which they were laboring at that time.

The formation and continuation of trade organizations is a matter of education and, like every other educational process, is by its very nature slow; but the result of the work done in New York is shown in a most gratifying increase in membership in the Wholesale Coal Trade Association from 28 members in October, 1917, to 109 members in 1920.

Many problems of mutual interest to members of the trade are continually arising and there is a distinct advantage in having a central place where the effect on the various individuals of such problems may be considered and, by consolidation and co-operation, efforts may better be directed to a prompt and proper solution of the same.

One of the most important functions that can be performed by the trade association is to see that accurate information as to its public relations is given to the public through the medium of the newspapers and popular periodicals.

Within the scope of my observation there is certainly no trade which has needed that sort of representation more sadly than has the coal business. It has long been the fashion to vilify and misrepresent the coal man and his business in all its phases. This has been due to a fact as to which it is futile to close one's eyes—that there have been abuses in the trade; but these have been multiplied and magnified and used as typical of the trade when as a matter of fact they were but isolated cases. Such, however, has been the habit of the coal man in the past that he has permitted these attacks to go by default, and as a consequence the impression that they are warranted has become widespread.

With an association properly officered and equipped for disseminating accurate information on coal matters, the members of the newspaper fraternity exhibit an entire willingness to go to it as a reliable source of information, and very generally use the matter supplied to them—so much so that while the efforts of the Wholesale Coal Trade Association of New York in this direction have been restricted to the local field, the treatment received has been cordial and gratifying. Whereas at one time it was the exception to give the coal man's side of the story, now there is hardly an occurrence of importance in which he is not given full opportunity to tell his story, which must result in a changed sentiment on the part of the public.

Declares Need of Organization by Coal Trade*

Organized in 1917 to Acquaint Members with Regulations of Fuel Administration, N. Y. Wholesale Coal Trade Association Has Steadily Grown—Margin for Physical Handling Increased from 15c. to 26-35c.

THE need for organized effort in the different branches of the coal trade directed toward the protection of the interests of its members is a subject upon which in the past there has been a great divergence of opinion, but within the last two or three years the necessary process of education along this line has been quite rapid, until today there is hardly to be found a progressive member of the trade who is not a member of at least one coal association, and, in numerous cases, of as many as three or four.

The Wholesale Coal Trade Association of New York, Inc., was formed in October, 1917, primarily as a means of keeping members informed as to the rules and regulations of the Fuel Administration. When it is remembered that Dr. Garfield's orders when combined form a volume of upward of six hundred pages, applying to no one coal man's business, but with which each was charged with being familiar, it will be seen that the secretary who did the work had quite a job.

In most of the work of a trade organization it is difficult to trace direct dollars and cents return to members. It is always gratifying to the officer charged with the work when he can point directly to a specific thing which has had that kind of result for his members. There are several instances of this kind in the record of the Wholesale Coal Trade Association of New York, the most definite of



CHARLES S. ALLEN
Secretary N. Y. Wholesale Coal Trade Association

which is the additional margin above the 15c. allowed by the Fuel Administration for "physically handled" coal.

While many in authority held that the rule in the purchasing agent regulations was not meant to cover the

*An interview with Charles S. Allen, secretary Wholesale Coal Trade Association of New York.

Calder Presents Coal Bill; Referred to Committee on Manufactures, La Follette Chairman

WASHINGTON CORRESPONDENCE

SENATOR CALDER, of New York, on Wednesday, Jan. 12, presented a bill to regulate the coal industry by publicity of costs of mining and sale of coal through existing government agencies. Although other coal bills in Congress as, for instance, the Frelinghuysen measures of last session, which are now pending, have been referred to the Interstate Commerce Committee, the Calder bill was referred to the Committee on Manufactures, of which Senator La Follette, of Wisconsin, is chairman, and of which Senator Kenyon, of Iowa, a member of the Calder committee, out of which the coal bill has developed, is a member.

The bill as introduced by Senator Calder (S. 4828) seeks to impress coal with a public interest, the title reading: "A bill to provide for the gathering of information respecting ownership of coal and ownership, production, distribution, costs, sales and profits in the coal industry and trade, and for publication of same, and to recognize and declare coal and its production and distribution charged with public interest and use, and to supply Congress with information relating to the coal industry for the purpose of legislating respecting interstate and foreign commerce, the public health, taxation and other matters, and for other purposes."

The bill calls for monthly or other reports by the Federal Trade Commission; investigations and reports by the Interstate Commerce Commission as to car supply and mine ratings; weekly reports by the Geological Survey; the licensing of coal operators and dealers; control of the coal industry by the President in an emergency; the prohibition of interlocking arrangements in the coal industry the same as were legislated against in the Clayton railroad bill; a coal brokers' tax; investigations by the Bureau of Mines concerning storage, inspecting and grading of coal and investigations by the Department of Labor as to the welfare of the miners.

To inaugurate the work the bill proposes appropriations of \$10,000 each for the Geological Survey and Interstate Commerce Commission and \$25,000 for the Federal Trade Commission.

Senator Calder issued the following statements in regard to the bill, the first in the Senate in presenting the measure, and the second from his committee, the latter explaining in more detail the purpose of the committee in presenting the proposed legislation:

SENATOR CALDER IN THE SENATE

"Mr. President, I desire to introduce a bill for certain regulations of the coal industry based on the committee's work thus far. It is the judgment of the committee that additional legisla-

tion will be found necessary, but the committee feels that this bill should be introduced and considered promptly at this time. A constant, sufficient coal supply at reasonable prices is so essential to public health that we feel anything which looks toward that object may fairly be considered emergency legislation."

STATEMENT BY CALDER COMMITTEE

"Primarily this is a bill to provide for current regular impartial publicity by reports through government agencies of essential facts concerning the coal industry and trade for the benefit of all concerned, instead of having the facts gathered by those in the industry and used or divulged only as suits their whim or purpose.

"Our investigation has disclosed: (1) That even after enjoining a government agency, the Federal Trade Commission, from gathering such facts for general use and dissemination the bituminous coal industry through its national association and in branches have gathered from its members all that the Federal Trade Commission requested and many more items, and, (2) that while these facts were then known to the coal operators they have induced biased and self-serving publicity propaganda, even boasting of having gotten their story out through the Associated Press as Associated Press news.

"Your committee believes a regular and impartial disclosure of the facts of the industry by districts as to supply and mine costs and prices will do much to prevent continuance or recurrence of profiteering.

"To enforce the giving of accurate figures the bill proposes a licensing system of all operators and dealers conditioned normally only on the furnishing of the required information. In any emergency threatening either unreasonable prices or shortage of coal supply and public health, the President is authorized to fix thereupon maximum prices, commissions and margins, over the whole or any portion of the United States, as the situation may warrant, and he may then revoke the license of anyone charging higher than the maximum prices fixed, and each such excess charging is also made a misdemeanor. This section also authorizes the President to deal in coal and control its production, movement and distribution, so as to put the government and not those self-interested in control in such an emergency when the usual laws of trade are in suspense, but limited only to the continuance of the emergency and in the protection of the public health.

"While profiteering has been both proven and admitted, there exists controversy as to exactly who is respon-

sible and to what extent. For example, as to the 900,000 tons purchased by the War Department on the spot market in 1920 the figures show that an average mine price greater than a reasonable original mine price separated such price from what the government was forced to pay—to wit: an excess of \$3.80 per ton average for the whole amount bought. How many resales and profits this represents in the different instances only a complete tracing of each carload will disclose.

"To meet such a situation—and the committee feels that such legislation will be helpful on the high cost of living in other lines—the bill has a provision taxing brokers' sales above a certain margin for the sale of coal had direct from the producer and taxing such sales to a much greater point on subsequent or useless pyramiding sales between dealers. This is calculated to drive coal in a direct channel from producers to consumers and keep it out of the whirlpool of endless commissions and margins.

"To prevent profiteering through subsidiary or affiliated concerns, a practice which has become quite general, the bill provides against such interested inside dealings by provisions similar to Section 10 of the Clayton Act prohibiting such dealings in the case of railroads.

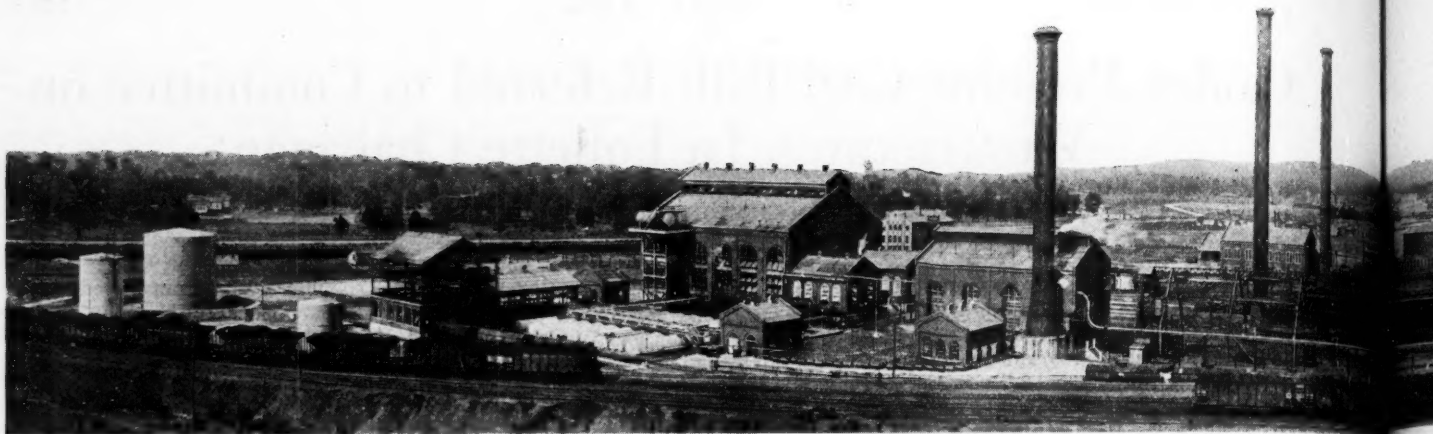
"The bill is based on the public health and welfare, on interstate commerce, and on the taxing powers.

CO-ORDINATES EXISTING AGENCIES

"The bill does not set up any new governmental machinery but utilizes the experienced agencies in existence, chiefly the Federal Trade Commission, the Interstate Commerce Commission and the Geological Survey. It lessens duplication and provides for co-ordination, thus lessening rather than increasing uselessly the burden put on industry. It also provides power to classify those in the industry, with power to grant reasonable exemptions by class where the burden would be too great and of little or no value.

"Individual names and price and cost data are not to be divulged under penalty, except in cases of profiteering, when the names and prices must be public, or under other exceptional circumstances, and then only on resolution signed by a majority of the responsible commissioners.

"The committee and its staff have quite carefully considered the provisions of the bill and have taken considerable counsel on them, and we believe its prompt enactment will be a distinct forward step and will accomplish much both as a remedial and preventive measure."



BYPRODUCT COKE PLANT OF THE TENNESSEE

This plant has 434 Koppers ovens using about 2,500,000 tons of coal per annum and producing about 1,900,000 tons of coke. The whole coal output of Arkansas or Texas could be put into these ovens and still they would be asking for more. The growth in the number of byproduct ovens still continues and the oven has reached such a place in the coke field that the work of the

beehive ovens will largely be to take care of the peak load of the coke demand. However, it must be remembered that the byproduct oven is widening the coke market. Byproduct coke is being used for domestic purposes whereas beehive coke rarely entered that market being too expensive and being produced so far from the place of consumption that freight rates were prohibitory.

By R. DAWSON HALL*
New York City

PROGRESS in coal mining during 1920 has been largely in the direction of adaptations of the methods of the metal industry. It is not surprising that this development should come, for the coal mining industry of late has largely taken form from without. The electric railroads of the country furnished the models from which our mine locomotives have been adapted. The civil engineers have given us concrete as a means of lining our shafts, and from them we have learned the value of gunite. From the railroad engineers we have derived the stripping shovel, the pneumatic drill and the general principles of the drag scraper.

From general industrial engineers we have taken the conveyor. From architects we have obtained a knowledge of stucco which in some mines is now being used for brattices. The multiblade fan had its first development for ventilating buildings and for creating a draft for boiler furnaces. From that it was introduced into mining. From the bridge engineer we have received the structural steel of our tipples. The automobile industry has afforded us the gasoline locomotive.

From the chemist came carbide, though Acheson was indeed not trained as chemist, and from the electric illuminating engineers came the electric cap lamp. From the electrician proper came the storage battery and the locomotive thus propelled. Many, therefore are the obligations of the coal industry to its sister crafts.

MINING ENGINEERS WORLD FAMOUS

In earlier days, when Great Britain was the source of the greater part of the coal produced, mining was the great master for all the industrial arts. It made the steam engine, it developed the pump, it discovered the rail, it invented the metal rail. Its engineers were foremost as locomotive builders, as railroad engineers and as constructors of light-houses. To them also we owe the in-

troduction of gas lighting. For coal mining the mechanical engineering profession was practically created. Coal-mine equipment was, as it were, the germ from which was developed all the mechanical arts. The greatest of engineers were proud to connect themselves with mining or rather the mines furnished the greatest of engineers.

It is well to recall this fact, for today the coal industry is a borrower and not a creator. Certain mechanisms peculiar to the coal industry, of course, exist—notably the coal cutter. At present mining engineers seem to have only adopted and modified what others have created for application to other uses than coal mining. It is a fact not extremely cheering to the coal industry that it grows mostly today parasitically on the labors of inventors in kindred lines. It no longer leads but follows. It takes a leaf here and a leaf there out of the books of other industries, and it is not any too industrious in doing this. It usually waits till some enterprising engineer in some of the kindred arts decides to make a conquest of the coal industry for his device and too often he has to plead for a hearing.

Just now, unfortunately for the metal industry but fortunately for the coal industry, there is a lull in the metal market and perhaps that is why metal-mining engineers are preparing so generally to invade the coal field and give it the benefit of years of experience in the development of jigs, concentrators, vibratory screens, filters, thickeners, fine crushers, skips, air-operated dump cars and many other appliances.

Coal Industry in 1920 Continued Metal-Mining

Coal Engineers Now Adapters, [Not
tory Screens, Filters, Thickeners,] Fine
Devices Are All Finding Application [to
Are Being Invented and Before Long

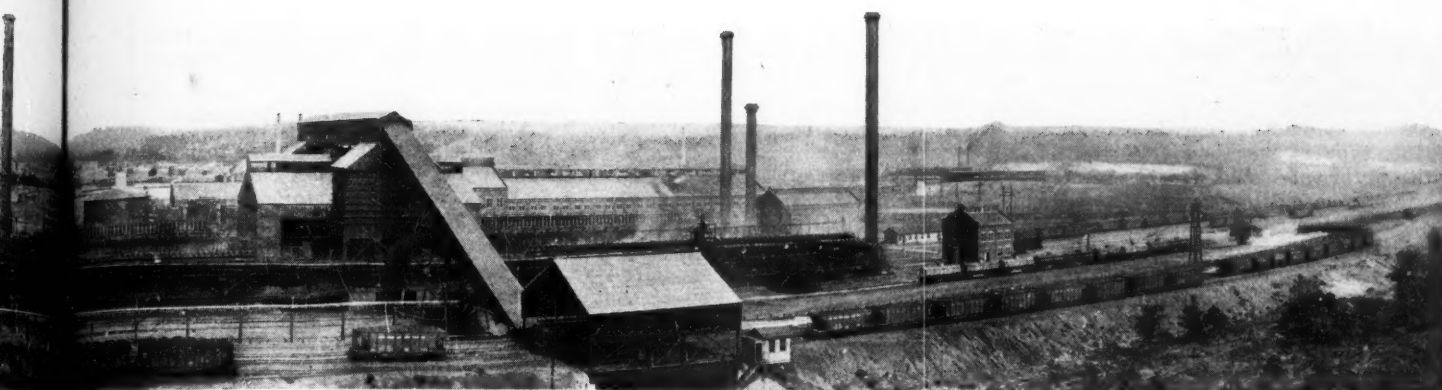
If a little more hardness of conditions falls on the metal industry perhaps we may be able to get a few of their mine managers, superintendents, shift bosses and engineers, who, "boring from within," will speedily bring the business of coal production more nearly up to the efficiency of the sister industry.

All of this is painful to write, but for the first of the new year no better occupation can be found than a just appraisal of what we are and what we need to be. If we cannot initiate we can at least have the credit of being speedy and discriminating borrowers. Mining may never stand again in the exceptional position it did when Smeaton, Watt, Stevenson, Boulton, Murdoch and Trevethick were in the heyday of their glory. Few engineers today can have the reputation which they enjoyed and still enjoy after a century and more of elapsed time.

There are men as big doubtless wherever industry is pursued, but the arts draw their progress from so many different channels that none seems entitled any more to the honor of being rated as even one of the primal sources. So much is this the case that outstanding men are extremely few today. Perhaps none of our present-day coal-mining engineers will be known fifty years from now. Few indeed of the men have their names appended to any epoch-making development and those that have been notable inventors or borrowers have been promptly forgotten.

It is this forgetfulness of benefits received that makes the annals of coal

*Editor, *Coal Age*.



COAL, IRON & RAILROAD CO., FAIRFIELD, ALA.

It is hard to introduce coke for domestic use, but once this result is achieved as it has been recently in Minneapolis by the efforts of the Bureau of Mines, the consumer is much pleased with it as it is clean to handle and makes no smoke. Especially is it valuable where anthracite is unobtainable. The skeleton shed on the right foreground in the accompanying illustration covers the

dumping points for cars from the mine. A conveyor takes the coal to the building and bins beyond the line of the ovens from which it is carried to the long batteries of ovens lying to the right and left of the conveyor. The gases with their burden of tar are piped to the byproduct separation plant to the left of the illustration.

to Borrow Ideas Liberally From Practices

Originators—Concentrating Tables, Vibrators, Crushers, Skips and Other Metal-Mining Coal Needs—New Loading Machines They Will Be a Part of Standard Practice

mining so lacking in distinctive individuals and indeed in distinction, for its glories are nearly all derived from the progress of other industries. It is not creating agencies; it is borrowing them. It would not now invent the steam engine, for instance; it would adopt it from some more advanced industry; nor would it be extremely prompt in doing so.

We in America are rated as a commercial people, but in one sense by no means are we as commercial as was the world in the early part of the last century or indeed as it is today. We look askance at the inventor as soon as he begins to sell his invention. We hold his engineers as men of dubious employment. But in the early part and even in the middle of the century just past men such as these were the wizards of the period. Fulton, Ericsson, Eads, Whitney, Goodyear and Bell found honorable place in our school histories. Today men of like talents are regarded with different eyes.

This is due partly to the practice of big manufacturing corporations. They do not publish permanently the names of the inventors whose devices they purchase or whose services they engage. Most of us could pass a creditable examination as to the inventors of the past and as to the places where they made embryo attempts to install their devices, but it is doubtful if we could answer a single question as to who it was introduced electricity below ground, who first built an electric railroad for mine service, who made the first mining machine or built the first loader.

As these men get no glory, there is no competition for honors. The first device of a new kind, therefore, must be designed and installed purely for a commercial reason—to make money—and what was once partly ideal and partly commercial has become purely commercial and is so recognized. We greatly need a Hall of Fame for coal-mining inventors that we may attain to the notion that inventions and their exploitation are in their nature of basic importance and that inventors and manufacturers are among the big benefactors of the country—the source of increased wealth and physical comfort.

Lacking inventive ability, during the last year the coal industry has turned to metal mining for enlightenment. In the past it has found that fine coal could not be washed by ordinary jigs, for with the churning action of the jig there could be no settlement and therefore no separation of solids so long as they were so fine as to be readily stream-borne. The James jig is a big improvement, as it has no suction stroke. It is finding successful operation at one of the breakers of the Weston Dodson Co., one of the most progressive corporations of the anthracite region. With such jigs it will be possible to reduce the size of the particles that can be segregated by jiggling.

CANNOT DISSOCIATE THE MOLECULE

The concentrating table probably will be found suited for even finer material. Several tables are on the market, among which, alphabetically arranged, are: The Butchart, the Card,

the Deister Overstrom, the Deister Plat-O, the James, the Overstrom Universal and the Wilfley. Where they are not confronted with the impossible they are successfully removing sulphur and ash. They cannot, of course, dissociate the molecule. If sulphur or phosphorus is in chemical combination with what has hitherto been called the "pure coal substance," no mere mechanical action will free it. Nothing but chemistry will do that work. Where to betray it the pyrite needs a microscope magnifying from 200 to 1,000 diameters, the coal is not likely to be ground fine enough for such separation and something even more placid than the concentrating table will be required for its separation. But all the pyrite not microscopic can be segregated. No more than this can be asked.

The Mitchell vibrating screen is another device which will soon receive general recognition, having already been accorded favorable attention. The Tyler Hum-Mer is another electric vibrating screen which may be placed in the same class. Short and rapid strokes do more than long and slower ones. Strange to say, the vibrating screen does not shake a breaker to pieces. It is far less trying to such a structure than the older and less dynamic screens. In fact, most of the introductions from metal mining do not have the racking quality of the heavier coal-mining machinery. The least noisy and most placid room in a mill is where concentrating tables are at work. They require little attention after being once adjusted, and one cannot but wonder what will happen to our breakers and washeries when mill machinery takes the place of the present equipment.

SAVING OF SUSPENDED MATTER

With the ability to wash fines will come a readiness to create them. We may be sure that we shall have Dorr thickeners and Oliver filters—in fact there have been several of the former already introduced, for the difficulty is to get the water out of such fine aggregates, which if not drained and dried

in a scientific manner will turn our streams into black floods which will carry away as never before the very best of our coal.

Anthracite culm is in particular need of this type of machinery. To begin with, anthracite has naturally more ash than other coal. It must have been a peculiarly clean peat that produced the Lykens Valley deposit with its 6 per cent of ash, for anthracite is coal that has lost all or nearly all its volatile matter and in suffering that loss has been reduced in quantity. The ash, with the exception of the sulphur, has not been similarly reduced. Strange to say, sulphur has been more greatly reduced than the ash itself. If it were not so, the sulphur in anthracite might run 5 per cent or 10 per cent instead of less than 1 per cent, as in most instances. Because the ash has not been affected by heat, anthracite coal naturally carries this material in excessive quantity.

Moreover less pure large coal is broken down and washed. The culm is largely what thus results. It is less clean, therefore, than the larger coal. Its ash content may reach 30 or more per cent. As by previously existing methods it could not be washed, it did not have as high a thermal value as the larger coal. It needs washing if it is to have a ready sale in competition with bituminous slack, and hence-

forth undoubtedly it will get it, though, of course, anthracite fines will not have an equal heating power with low-volatile bituminous slack even when the coals are equally pure, for in anthracite the "free hydrogen" is lacking.

Operating against the use of these jigs, concentrating tables, thickeners and filters is the possibility that instead of cleaning coal so meticulously we shall use it, ash and all, as pulverized coal. Already we are using that form of fuel not in great quantity but increasingly. However, we may find it well to both clean and pulverize coal, for it does not pay to transport excessive quantities of ash, in coal or as cinder. Anthracite has been proved a good coal for that purpose, but some of it has been found hard to pulverize. For that necessary work the Hardinge mill or some form of tube mill is available—machines wherein cascading balls turn anthracite, and for that matter bituminous, coal into impalpable dust.

Large numbers of ring-roll mills have already been introduced. They have shown how bituminous coal and some anthracite can be converted into dust. Already in the West that type of pulverized fuel has been introduced for school, factory, and office consumption. An illustration shows a truck making a delivery of this type of coal as manufactured and distributed by the Pacific Coast Coal Co. Impure coal and smoky

coal can thus be burned with high efficiency and at least comparative smokelessness.

INVENTORS HAVE NAMES PRESERVED

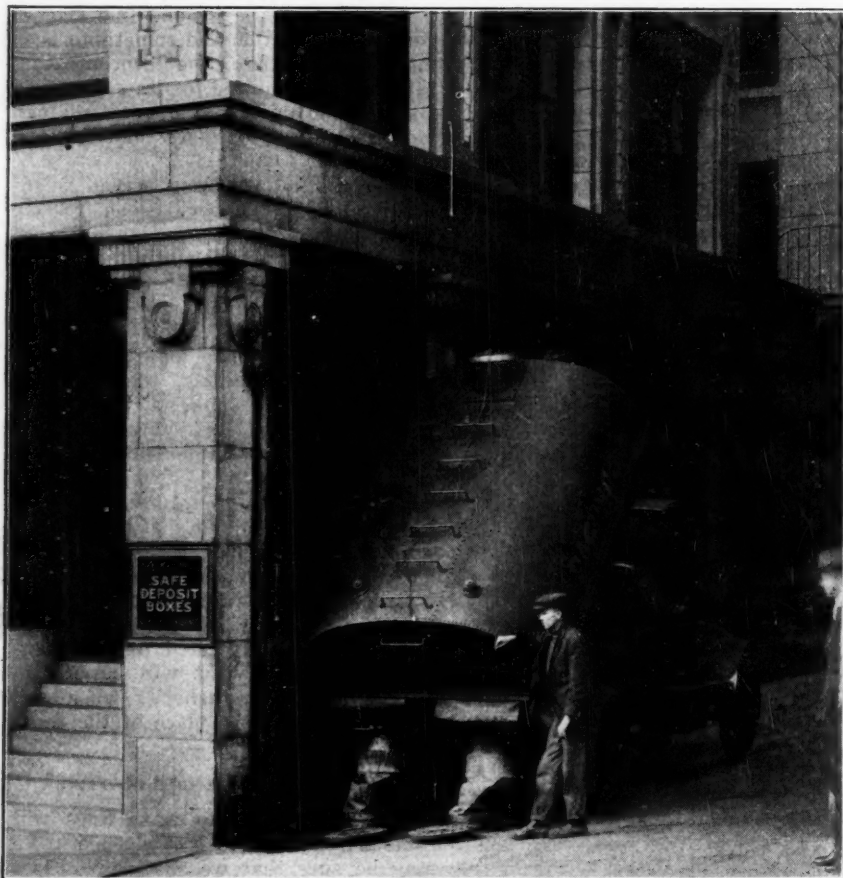
The reader will be interested to note that many of the different devices enumerated have the inventor's name appended. In the metal industry the machines are nearly always so distinguished. There has been a disposition to remember in this way the men who have aided in the advance of the industry. Great unknowns such as the coal industry contains are rare in the metal profession. Most of the basal patents are owned by the inventors, and their ownership is thus recognized. This has done much to make invention honorable. The men who have made that industry what it is have not died in obscurity but will be remembered by name by another generation.

That also is partly true in coal mining as regards loading machinery, which is perhaps that form of coal-mining development which has been most active in the past year. The loading machine is with us to stay, but as such machines are mostly quite expensive and are likely to remain so, they will be a success only if they are given an opportunity to work continuously. Big machines which treat the coal with due compunction will, if they are not supplied with cars, eat themselves up with interest charges. My advice is do not buy a machine if you are not prepared to move heaven and earth to keep it busy. N. D. Levin recently advocated in these columns better mine management as a means of keeping cars moving to and from the loading machines. In my opinion that is not all. We need a readjustment of methods. We must resign the room and pillar and get a longwall face, preferably, it would seem, by panel retreats. This will call for machinery that will make rapid development work possible.

It may revive a form of machinery, the heading-driving machine, that was the great aim of inventors ten and twenty years ago. Of all the many promising devices at that period few, if any, remain. The Jeffrey heading machine, however, is doing excellent work and seems likely to have increasing use. At the hands of Carl Scholz it is receiving such satisfactory application that it cannot fail in time to receive general recognition. On this machine and others like it rests the hope for a universal use of the loading machine and the face conveyor.

LONGWALL NEEDED MORE THAN EVER

With longwall it will be possible to reduce the amount of narrow work and crosscuts and to limit the total amount of area developed. The new loading devices, of course, will work if they must with room-and-pillar methods, but they will serve a larger purpose when they are given the assistance that longwall retreating makes possible. In fact the cutting machine and the electric drill will both be bigger factors as soon



DELIVERING PULVERIZED COAL

In the West the Pacific Coast Coal Co. is delivering pulverized coal to business and school houses in tightly closed automobile trucks provided with flexible hose attachments. The fuel is fed into tanks that are housed in the basements of these establishments, from which it is automatically fed to the furnace fires. A Kansas City firm is preparing to furnish pulverized coal to buildings in that city.

as continuous cutting and frequent drilling along a single face are made feasible.

The year past has seen some marked advances in loading machines. The Joy machine has gathering arms which bring the coal to the conveyor, and the Dillig loader has a caterpillar tractor that makes it easy to place itself anywhere, whether a track is available or not. It can shovel on one side of a prop and then back around and get on the other side and shovel again. It is a truly flexible unit and probably the manufacturers will find it has a pleasing quality in the fact that it is not dependent on track gages and so can readily be standardized.

During the year storage of coal took a few further steps forward. F. C. Thornley & Co. has erected storage plants for the Bertha Coal Co. These have obtained dumping and loading costs so low that they raise the cost of the coal thus put into and out of storage not more than 2½¢ a ton. Conditions during the year just past were peculiarly favorable for storage, because orders were plentiful, prices were high enough to amply justify storage expenditure, employers had somehow to be kept satisfied and cars were in short supply. With storage it was possible to store and load out cars as soon as they came in.

THIRTY-SEVEN CARS AN IDLE DAY'S RUN

A mine of the Bertha Coal Co. received thirty-seven railroad cars on an idle day, Thanksgiving. That night the cars went out loaded—from storage. Most of the coal thus loaded represented a clean gain in tonnage. Had it not been loaded the tonnage would never have been delivered later. Other companies installing loading plants were the Peabody Coal Co. and the Pickands-Mather Co. In previous years the Consolidation Coal Co. had installed day-by-day storage, and the Orient Mine of the Chicago, Wilmington & Franklin Coal Co. and No. 6 Mine of the Old Ben Corporation had established large coal dumps. The practice is likely to spread.

Most developments arise at time of great need and continue when the need is not so acute. When the market is badly balanced, it is always well to have a place to put unsalable sizes. It is always an advantage to be able to run a full day regardless of car supply and to fill all cars delivered despite any deficiencies in coal production. It is always preferable to be able to load into stock if there is not enough coal ordered for a full day's run. It is a feature, moreover, the railroads will be sure to indorse, for it assists in the rapid movements of cars and lessens the use of railroad equipment for storage. During the year F. C. Thornley & Co. introduced its coalometer for the measurement of the heat of storage piles, and thus made coal storage at the mines and elsewhere a far safer investment than it otherwise would be.

To meet the need for frequent loadings and unloadings of cutting ma-

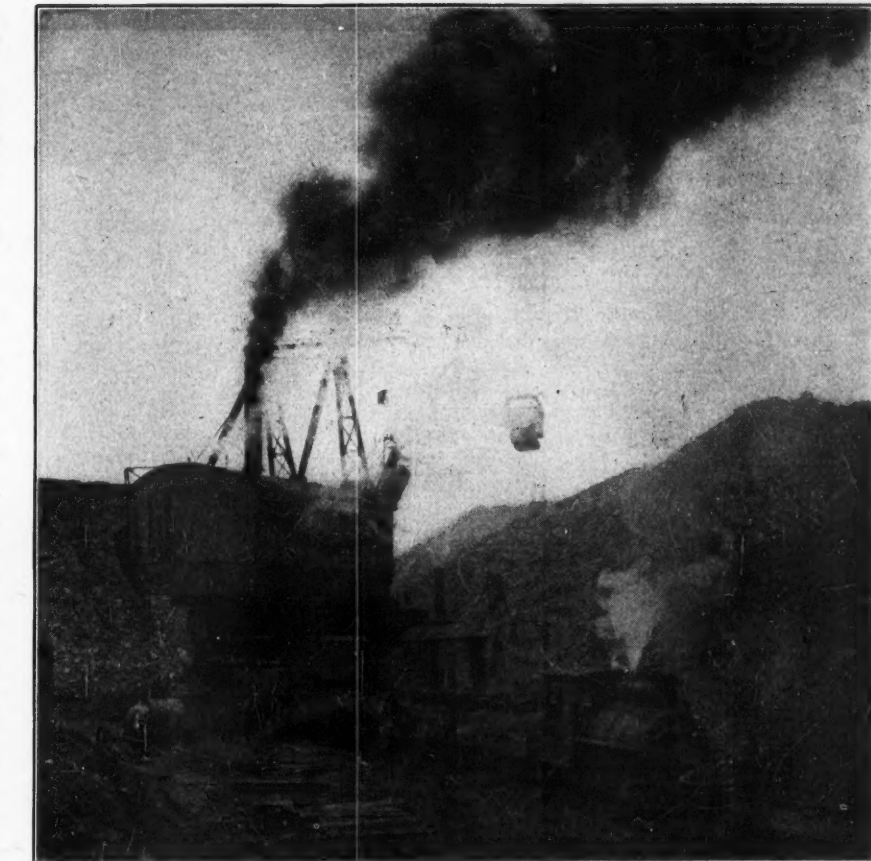


Photo by Underwood & Underwood.

STEAM-SHOVEL WORK

Looking at this illustration one is led to wonder why such a magnificent piece of surface equipment as the stripping steam shovel shown is used with cars which were obviously designed for underground purposes. Such cars are hard to load satisfactorily, much coal is spilled, the net weight is small compared to the gross weight and the resistance to traction unless roller bearings are used is unnecessarily large. With "all outdoors" a railroad car with side dump could be used with advantage and dumping would be speedier and less wasteful of material. The illustration is of a strip pit in Hutchinson, Kan.

chines, the Sullivan Machinery Co. has introduced the Tipturn truck, which tips and swivels and so assists in the unloading of the machine and places it more favorably at the working face than does an ordinary truck. It is thus far available only in coal over 4 ft. thick.

INSTALL 35-TON MINE LOCOMOTIVE

During 1920 the Cambria Steel Co. has placed at its mines 35-ton mine locomotives, which are the largest single-unit locomotives for 250-volt mine service. These Westinghouse locomotives have air brakes and are equipped for dynamic braking. Five 27-ton Westinghouse quencher locomotives are under construction for the byproduct works of the Cambria and Carnegie Steel companies. They are equipped with automatic and manual electro-pneumatic control. Much has been accomplished in magnetically-controlled mine locomotives, and there is a strong indication of increased demand for this control. Interesting applications of this equipment have been made to car dumpers, ore bridges, hoists and similar machinery, but space does not permit of detailed reference to them.

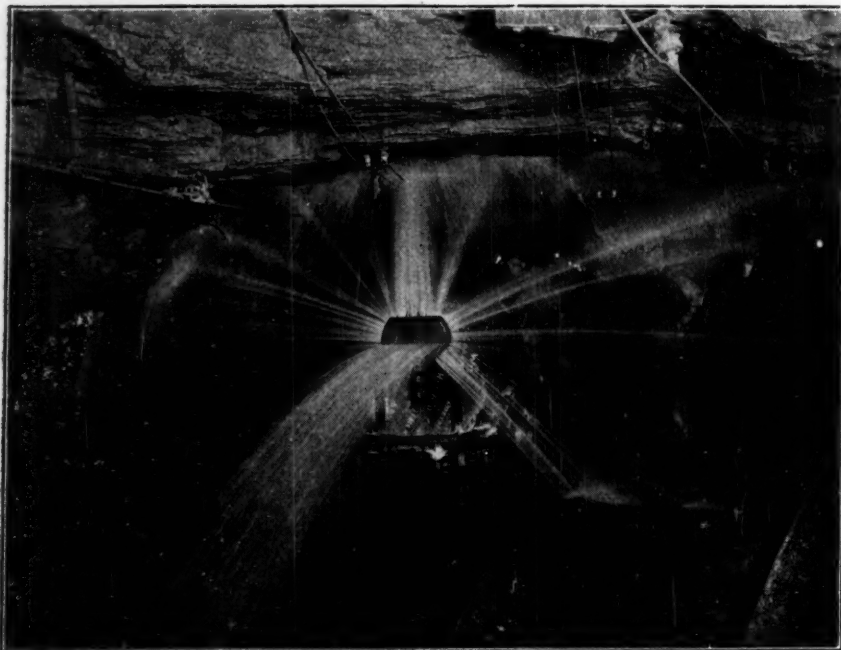
More and more power is being purchased by coal mines. It seems anomalous to find coal mines operated by water power or by steam generated at

distant points but the trend is steadily in that direction. On Dec. 18 of the year 1920 the first 60,000-kw. unit was placed in operation by the Westinghouse Electric & Manufacturing Co. at the Colfax station of the Cheswick Power Co., a subsidiary of the Duquesne Light Co. This plant is located at a coal mine.

A large extension has been made in the use of motor trucks, a change which undoubtedly will modify tippie design in a marked way, though so far but one tippie of size has been constructed with this possibility in view. For generations manufactories have gravitated toward the coal supply and in consequence the mines find themselves surrounded by a large number of factories and residences. Some of the most thickly-populated districts are dotted around mining areas. The truck has in these regions large opportunities which are as yet but partly developed.

Progress in the development of by-product practice has been steady but not notable—that is, there has been no new principle developed. The same may be said with regard to the low-temperature distillation processes. There has been undoubted progress, but the methods have not undergone any remarkable modification and no new processes have been initiated.

We are gradually approaching a new



SPRINKLER TANK

Photo by Underwood & Underwood.

This tank does not merely dampen down the heading. It washes it clean even more effectually than a summer floodburst does the landscape. The coal dust thus disturbed entirely forsakes its resting place, leaving the walls bare and relatively explosion-proof. The Wisconsin Steel Co. uses this car at Benham, Ky.

era, but it does not come speedily. The time will undoubtedly come before long when small sizes of coal will be more greatly in demand than large coal. Perhaps all coal will be burned in pulverized form. This will make it unnecessary to use such care in mining and eventually the large coal will have to be crushed to make it suitable for the market.

Meantime we have to use precautions for producing a maximum amount of large coal and every effort has to be made to prevent the miner from exercising his preference for mining by powder. With the market preference for unbroken coal the plan of D. Vance Sickman, of Denver, Col., to bring down the undermined coal by shearing

and hydraulic pressure must be regarded as a desirable advance in mining methods.

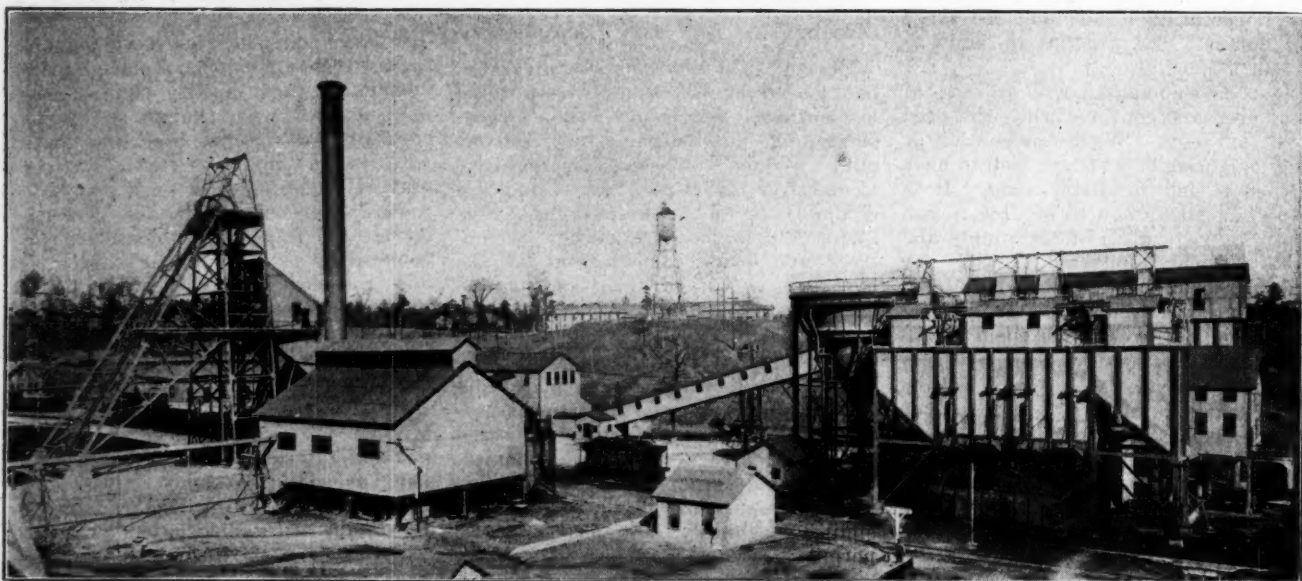
During the year attention has been called to the need for protection in case the power from a central station or the private station fails. Internal-combustion engines have been proposed as a means of driving the fan in such an event. A steam engine involves the maintenance of a boiler which has to be kept under steam if it is to be immediately available. An illustration shows one of two natural gas engines of the Bessemer Engine Co., Grove City, Pa., that have been installed in the power house of the Consolidated Coal & Coke Co., Plumville, Pa. It is a 165-hp. machine and drives a 100-kw. 250-volt

direct-current generator through belt transmission. These engines are in steady use and cost less to run than steam engines when coal cost is considered. In starting, compressed air is used to turn the engine over a few times. This action suffices to start the magneto, and current is delivered to a spark plug where the explosion takes place.

A sign that machinery has reached a degree of finality is seen in the progress of standardization and in the development of detail. The American Mining Congress has appointed several committees on standardization, both for coal and metal-mining work, and some suggestions have been made looking toward elimination of excessive differentiation. As to improvements, reference should be made to the Link-Belt Co.'s new cutting chain, which holds the bits tightly in place without undue pressure and provides that the bits shall be held in the position which they should assume if the chain is to cut its way readily through the coal. It makes it possible also to turn the bits over and end for end, thus greatly increasing their length of service.

An improvement in the method of tempering drill steel bids fair to reduce the amount of breakage and increase cutting speed. C. E. Juhlhn, of the Bureau of Mines, has been studying this important factor in drilling at Minneapolis, Minn. Rock drills and coal drills are finding increasing application in coal mines, and conditions favorable to speedy and economical operation will be studied with a view to reducing drilling costs.

Cementation in the sinking of coal shafts, which had its initiation in the Rhein-Preussen pits near Homburg in 1864, has had further exemplification in repairing the damage which the inventor's countrymen did to French mine shafts. It has been used also in driving through fissured ground and in building a dam foundation.



DOCENA PLANT OF TENNESSEE COAL, IRON AND RAILROAD CO.

Modern coal plants are marked by simplicity of design and orderliness. This is the surface plant of a company that prides itself on the neatness of its villages. It tries to keep its mining plant as trim and trig as its towns.

MARKET REVIEWS

Markets and Production in 1920 and Forecasts of the Future as Seen by
Our Correspondents in the Leading Cities and Important Coal Fields—
Diagrams Showing Course of the Spot Market for Eighteen Principal Coals

Middle West Looks for Improved Coal Trade As European Situation Mends

Necessary Deflation Period Apparently at an End,
Renewal of Industrial Activity Expected Soon on
a New Basis—Prices Not Likely to Duplicate
Heights of Last Year, but Business Enough for All

BY HAVEN A. REQUA
Chicago, Ill.

THE coal industry in the Middle West underwent some varied and new experiences during the year 1920, and although it proved a successful period from a financial standpoint, nevertheless it had its disadvantages in more ways than one. Taken all in all, it was a trying year for the operator, the wholesaler, and the public. During 1920 conditions changed so rapidly that a price quoted on a Monday, for instance, would be out of line a dollar

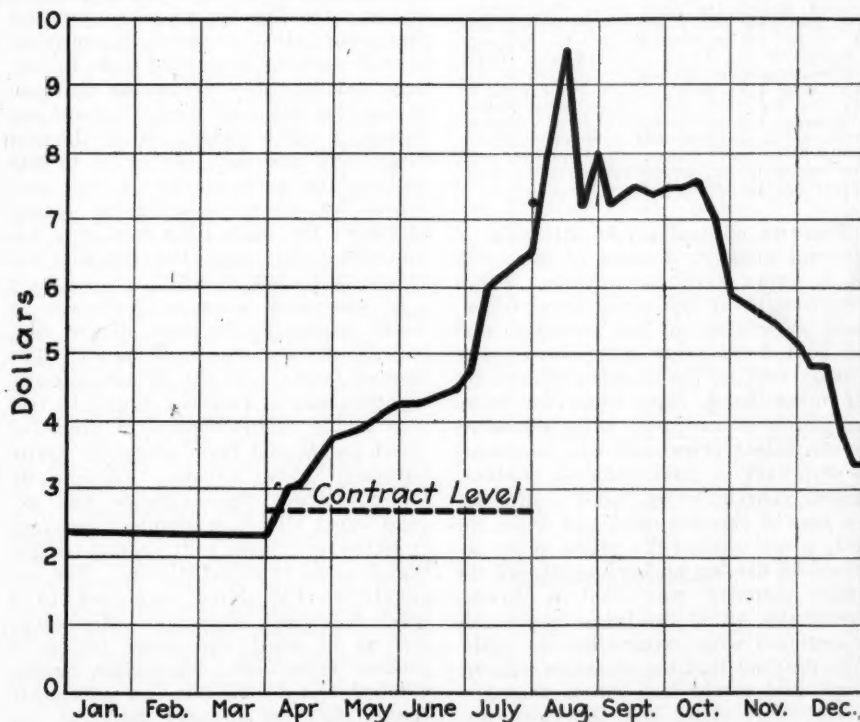
or so one way or the other on the following Tuesday or Wednesday. Prices went from normal levels in unprecedented heights, and toward the end of the year slumped back to normal and even subnormal figures.

From January to April coal prices were controlled by the government—an unpleasant sequence of the miners' strike in November and December, 1919. During January and February the weather in the Middle West was unusually cold, and as a result of this, combined with the coal shortage, occasioned by the strike, when spring arrived there were practically no reserve coal tonnages on hand. In April the government relinquished control of coal prices and as the demand was strong, competitive bidding soon put the price of coal a little above the government prices.

For a thorough understanding of the Middle West coal situation industrial conditions ought to be considered. Practically all the manufacturers had their books filled with very profitable orders, and the general feeling was to turn out the finished article at any price, as either the American public or the European public would be glad to buy and pay the price. Goods were rapidly placed on the market, and more rapidly absorbed, countless manufacturers took on more orders at even more profitable margins and the country hummed with industry. Coal was needed, and in greater quantities than ever before.

At about this point in our industrial career the government turned the railroads back to private ownership, and a short time after that there developed an "outlaw" strike on the part of the switchmen. Soon our great terminal yards were blocked with freight which the distressed railroads could not handle efficiently. Shipments of all kinds, even foodstuffs, were delayed almost indefinitely, and the country faced—it is now pretty generally conceded—a grave crisis. Trainloads of coal could not be delivered, equipment was tied up and idle, empty cars were not sent back to the mines in sufficient quantities, and the output of Illinois and Indiana mines dropped to about 25 per cent of normal and less.

While all this was developing the manufacturers were growing increasingly nervous, and soon realized that if coal was not procured immediately, vast profits would be lost. Purchas-



SPOT PRICES, BITUMINOUS MINE RUN, FRANKLIN, SALINE AND
WILLIAMSON COUNTIES, ILL., 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from Franklin, Saline and Williamson Counties, Illinois, in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations on the Chicago markets.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in August, due to the outlaw strike of the day men. A sharp decline followed but was checked through a period of fluctuation until the middle of October, after which prices followed the general decline observed in all fields. It should be remembered that the greater part of the production was sold on contracts that the average realization of all producers will be more nearly the contract level than the average of spot prices. Spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower. Approximately two-thirds of the annual output of this field is screened and shipped as prepared sizes and screenings.

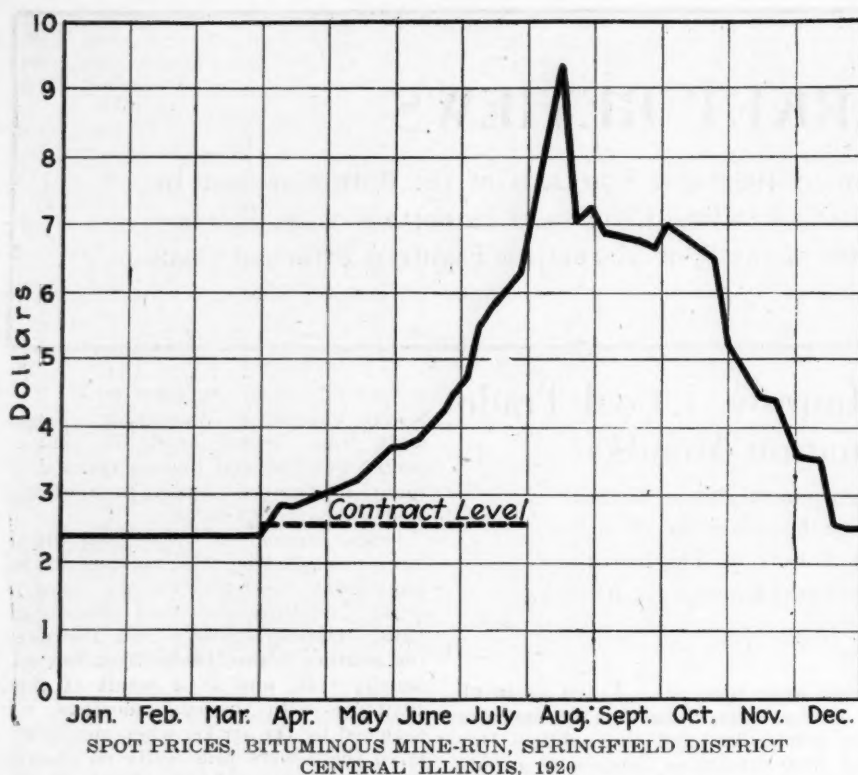


Diagram of spot prices, in dollars per net ton, of min-run bituminous coal from the central Illinois Springfield district in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Chicago market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April and reached their peak in the middle of August. A sharp decline followed in the next two weeks, after which came a brief period of fluctuation before the general decline commenced in October. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

ing agents for all sorts of industrial concerns rushed to coal centers like Chicago, Indianapolis, St. Louis and Peoria and bought as much coal as they could. As a perfectly natural and logical consequence prices on all grades of coal began to advance sharply. The higher the prices, the more desirable became the coal, and soon some of our more irresponsible operators and jobbers—and especially the jobbers—were selling coal at heretofore unheard-of prices. In spite of this, more coal was wanted, and some of the larger manufacturing companies sent men down into the producing fields to buy coal as it came from the mines.

Prices went still higher. There is an amusing incident told of a certain automobile manufacturer of Detroit—a man who made the world smile a few years ago when he sailed for Europe in the fond hope of being able to end the World War. This manufacturer sent out a great number of people from his offices to purchase coal for him. Two of them happened to meet at a certain coal tippie, and as they were unknown to each other they started some spirited competitive bidding, which shot the price of coal up \$2.50 per ton at that particular mine. This example is perhaps a little overdrawn to be exactly accurate, but it will serve to illustrate conditions at a great many mines during July and August.

The rise of coal prices attracted to the coal industry a class of men who as a type were undesirable. Mines were bought by those who had no previous experience in the business, and the coal from these mines was quite frankly sold to the highest bidder. On the other hand, there were far more companies who refused to be influenced by exorbitant prices and who continued to ship coal to their trade at contract prices. The majority had to suffer for the sins of the minority, and when the daily press printed the prices being obtained by the out-and-out profiteers, the whole industry was held to blame. Practically all of the large responsible companies, with reputations to maintain, realized that the situation was unusual and would last but a comparatively short time, and therefore preferred to fulfill their contracts to the letter. These operators knew that the time would come when they would need their friends, and late developments in the coal industry have justified this opinion.

A large number of coal jobbing concerns were organized and these new companies were responsible in no small way for the unenviable reputation given the coal man during the summer months. Numerous cases can be cited where firms of this type traded cars of coal among themselves so that a car of coal often reached the ulti-

mate consumer with from five to seven profits of from 25c. to 50c. per ton tacked onto it. Out-and-out abuses like this were very much frowned upon by all responsible men, and the operators took steps, and efficient steps, to have these evils stopped.

Almost any operator of standing in either Illinois or Indiana will, if questioned, express the opinion that this unscrupulous class of jobber or wholesaler came very near to putting the coal industry back under Federal control. These same jobbers, however, are now getting their just reward, being forced to take care of the coal they bought on contract last summer. As prices are down almost to pre-war levels, it is not expected that these people will be able to stand the pace much longer. There is a place in the coal industry for the reputable jobber who supplies an economic want, but there is no place for the man or firm who comes into our business with the sole idea of reaping big profits and ignoring public welfare.

During the summer months the coal industry was subjected once more to governmental interference—this time from the Interstate Commerce Commission, who saw fit to promulgate priority rulings. As a direct result, the people in the Northwest became so frightened and agitated over their coal supply that they came into the market and brought a still greater strain on our Illinois and Indiana mines by buying our coal to take the place of West Virginia and Kentucky coals which they thought they would not get. In order to buy coal on the open market it was necessary for them to outbid the manufacturers for what little coal was not contracted for, and the market advanced to higher levels.

In the early autumn there was a slight decline in the demand for coal, but the decline was very small. The farmers, and the Middle West has quite a percentage of farmers, began to feel poor owing to the decline in prices of grain, cattle and farm products. Quite naturally they stopped buying. By mid-September the railroads had accomplished almost a complete recovery from the switchmen's strike, and freight began to move satisfactorily. The car supply at the mines improved to a marked degree; labor was satisfactory and as a result our mines began to produce more coal. Production figures climbed, and a little later on sufficiently reassuring piles of coal had been accumulated.

In early October we began to feel, if only faintly, the first signs of what was to follow. Europe was in a bad way, and this soon affected our own country in the shape of cancelled orders for manufactured products and cancelled orders for export coal. Added to this was the fact that our own long-suffering buying public came to the conclusion that it was paying too much for commodities and a "buyers' strike" followed. Manufacturing plants began to slow up, more orders were cancelled and prices began to decline.

In November and December the market price of coal fell rapidly. It was discovered that some purchasing agents, being fearful earlier in the season of not getting their coal requirements, had duplicated and in some cases even triplicated their orders, so quite naturally when coal began to loosen up it was necessary for them to cancel a few of their orders. Cancelled contracts and notices to hold shipments became the order of the day, and when the industrial outlook began to appear black and even threatening it was found that most manufacturers had substantial tonnages of coal on hand. Even more orders were cancelled and buying ceased. This explains what drove the steam-coal market down nearly to pre-war levels. The market for domestic coal was not better off.

The weather throughout the autumn and until the end of December proved unusually mild—statistics tell us the mildest in forty years. There was plenty of coal on hand at the head of the Lakes, retail dealers had full bins, and the public was not inclined to purchase. Naturally the dealer did not want to buy until he had moved his high-priced coal. In the cities those without jobs did not want to buy coal except in a hand-to-mouth fashion, and those who had jobs didn't care to buy until prices declined. In the country conditions were not much better, as the farmers were all feeling poor, on account of the decline in grain products. Eastern operators who up until late in the year had exported their coal, now turned to the Middle West and trainloads of splint and smokeless coals moved to our cities, to be sold on consignment. Prices were cut, coal had to be disposed of and the end of December saw a badly disorganized market, with practically all grades of coals selling at bargain-counter figures.

Prospects for the coming year are very hard to foretell. It is certain that the immediate future is not over-bright, but we are told that fundamentally conditions today are in just as good shape as they were three or four months ago, when the country was very active industrially. It is not expected, however, that there will be any marked improvement with us until the European situation gets better. The world has changed rapidly; so rapidly that a great many of us have not until recently understood it.

We will admit that it is hard for a coal operator with a mine, say, near Peoria, Ill., to understand that his mine is closed directly because England and France and the rest of Europe are in bad shape, yet this is the case. Our Continental friends are hard up; they stop buying, factories close, and our friend in Peoria receives an order to hold up shipments of his coal until conditions change. It's a small world after all, and with the advance of science and international credits it is getting smaller all the time. The coal operator believes that we have now reached or nearly reached the end of the painful but necessary deflation

period, and that very soon there will be renewed industrial activity, but on a new basis. He does not believe that prices will ever go to the heights reached last year, but he thinks there

will be enough business for all. Perhaps you will say that the coal operator is an optimist, which is quite true. If he were not an optimist he would never be a coal man.

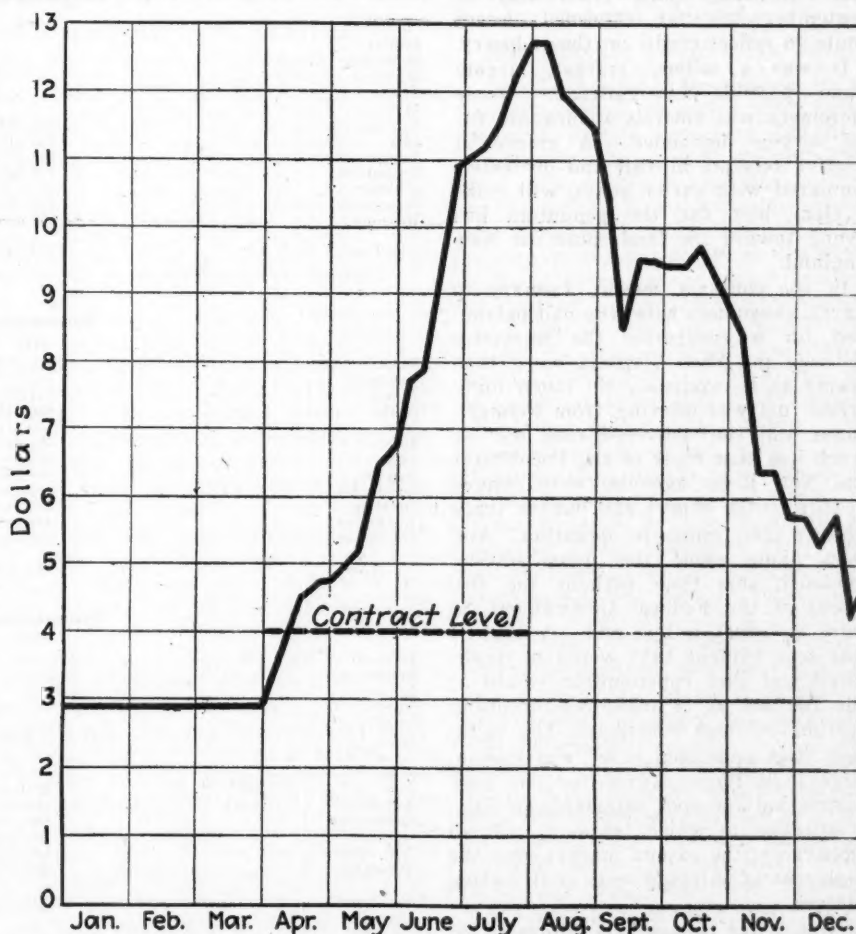
Trade Conditions in New England in 1920

Shipment Now Largely by Land Route—Lower Freights Enable Pennsylvania Product to Displace Smokeless Coals—Court Decision Made Seizure by Railroads Costly Practice—Extensive Buying Unlikely for Several Months

By G. G. WOLKINS
Boston, Mass.

CONTINUOUS turmoil marked the coal year just closed. After several months of intensive striving to stock enough fuel to insure full time operation through the winter, New England consumers were confronted in September with an abrupt reversal of economic conditions. Manufacturers of textiles, shoes, rubber and metal products and certain grades of paper were among the first to feel the change, but practically every other industry quickly

followed suit. By November the let-down was so complete that railroads were laying off locomotives and train crews, and all prospects of a stable market for steam coal had gone glimmering. The end of 1920 saw reserves in this territory on a parity with those of 1918, a year when government distribution had almost submerged us with a great tidal wave of indifferent fuel. The market reacted promptly to the withdrawal of price fixing on March



SPOT PRICES, BITUMINOUS MINE RUN, CAMBRIA AND SOMERSET COUNTIES, PENNSYLVANIA, 1920

Diagram of spot prices, in dollars per net ton, of mine-run bituminous coal from the Cambria and Somerset fields of Pennsylvania in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Boston weekly markets. Majority of the tonnage involved moved via all-rail.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on the diagram) through the operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak Aug. 1. Thereafter the decline was steady. In the middle of September fewer traffic restrictions caused a temporary stiffening of the market. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices.

31. The railroads under government control were designedly left with small stocks and shipments generally were dealt with so sparing a hand that buyers here were ripening fruit for the broad market that was certain to follow. In too many producing quarters contracts were of little concern, and, later, assigned cars furnished so conclusive an alibi that large numbers of steam users who supposed they had made adequate provision in March felt themselves forced in May and June to enter the spot market and buy for the protection of business they then assumed would continue certainly to the end of the calendar year.

That is not to say that contract coal failed to come forward in volume; it is simply to stress the fact that interruption in the usual channels of supply, however well-intentioned, seldom has any but serious consequences. A few of the more widely known producers were consistent shippers of contract coal, but this was not characteristic of central Pennsylvania. The percentage of high-priced, low-grade fuel that came bouncing along from May to September too far exceeded decent limits to reflect credit on the industry.

It was a sellers' market, largely made possible by railroads whose equipment was entirely inadequate for the service demanded. A glance at relative receipts all-rail and by water, compared with earlier years, will make it clear how far the pendulum has swung toward the land route for New England.

In the contract season, January to March, consumers here who had patronized for a generation the smokeless districts in West Virginia were then asking to be excused. So much high-grade fuel was offering from Pennsylvania and the delivered cost was so much less that most of the Pocahontas and New River agencies were obliged to turn to the export and bunker trade to keep their mines in operation. And then along came the quasi-political publicist, this time without the full power of the Federal Government, to raise so great a hue and cry that it was soon evident 1918 would be duplicated and that consumption would so far fall off as to make well-meaning "estimates" look ridiculous. The agitation "Get your coal now" was responsible in a large degree for the high figures bid for spot shipments in July, a situation to which frequent railroad embargoes, the export market, and the high cost of shipping were contributing factors.

Now, after tremendous efforts to increase motive power and ton mileage, and to provide trackage and terminal facilities, the New England railroads are facing bankruptcy because of extremely light traffic. Even modern-type steam colliers are a drug on the market, the export demand has faded almost to inconsequence, and to such extent are liners withdrawn from transatlantic routes that the bunker trade likewise, for most shippers, show

signs of collapse. This is a strange sequel to the mad rush since 1916, but it has its counterpart in other lines and makes 1920 a year to be reviewed seriously for the informing lessons its record teaches.

COAL SEIZED FOR RAILROAD FUEL

The practice of seizing coal for locomotive use was a natural outgrowth of government operation and a fixed price. Purchase thereby became too simple. A court decision making plain that confiscation of private property involves adequate reimbursement put a new face on this comfortable pastime and the carriers have paid heavily for their failure to buy in the open market when contracts were being offered. We look to see more intelligent provision this year for locomotive coal. There

will be the advantage of heavy reserves at the beginning of the season and it is not likely there will be any such feverish buying of water coal as prevailed at certain periods in 1920.

So many producers have now fixed a minimum below which they dare not go without selling at a loss that sundry large contracts will soon be made by the New England railroads on some understanding as to the present wage scale. In the judgment of representative coal men the present basis will have to be adjusted if mine-workers are to be given employment. The transportation lines, without much question, will take the lead in 1921, for the industries in general at the present rate of consumption hardly will be interested in coal purchases until well into the spring. It is now clear to railroad

Receipts of Coal in New England by Months, 1916-1920

(In Net Tons)

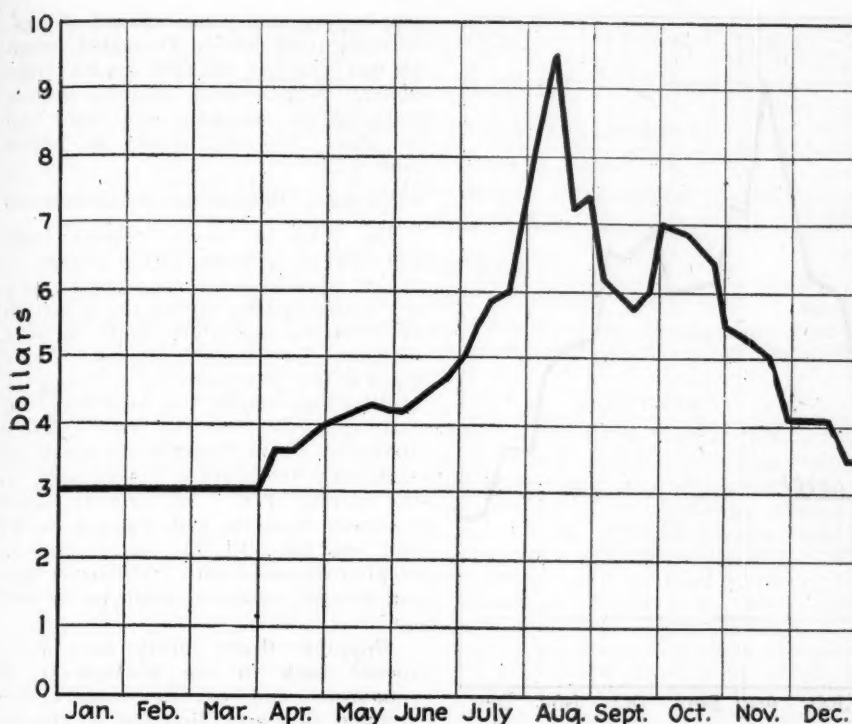
Anthracite by Tidewater					
	1916	1917	1918	1919	1920
January.....	311,096	311,096	155,595	289,463	218,611
February.....	207,386	207,386	169,028	188,889	202,900
March.....	444,996	444,996	368,206	79,225	325,455
April.....	395,389	395,389	333,384	210,671	224,057
May.....	346,017	346,017	461,549	374,014	288,694
June.....	2,457,109	414,951	444,241	322,334	363,274
July.....	466,515	431,456	499,822	348,671	283,894
August.....	538,239	464,251	464,211	317,106	391,321
September.....	498,869	470,008	383,453	351,487	321,145
October.....	485,172	363,788	309,801	266,135	339,421
November.....	429,582	345,903	255,394	276,377	253,334
December.....	352,460	225,828	271,656	285,432	.....
Total.....	5,227,946	4,421,069	4,116,340	3,309,804	.....

* January to June, inclusive.

Anthracite by All-Rail					
	1916	1917	1918	1919	1920
January.....	510,514	436,222	622,267	626,657	647,138
February.....	515,431	350,839	613,208	599,115	368,632
March.....	341,935	580,981	752,040	268,415	519,929
April.....	406,648	560,552	824,895	571,785	572,632
May.....	329,871	579,543	850,023	609,780	658,976
June.....	403,867	646,107	1,059,630	504,340	812,000
July.....	508,493	727,532	1,076,839	664,694	586,039
August.....	599,786	833,222	916,655	566,398	687,065
September.....	450,284	642,844	860,420	677,460	665,809
October.....	453,541	716,751	780,082	781,660	789,304
November.....	459,497	643,857	567,519	635,748	151,769
December.....	507,346	540,312	580,722	762,332	.....
Total.....	5,487,213	7,258,762	9,504,300	7,268,384	.....

Bituminous by Tidewater					
	1916	1917	1918	1919	1920
January.....	1,076,994	1,076,994	653,395	739,948	700,856
February.....	932,003	932,003	851,483	612,362	740,599
March.....	1,221,891	1,221,891	1,286,520	466,097	941,143
April.....	7,435,147	1,271,980	1,261,799	717,774	709,850
May.....	1,262,549	1,262,549	1,687,749	789,170	802,612
June.....	1,260,944	1,260,944	1,469,654	752,045	783,429
July.....	1,081,224	1,023,216	1,833,944	694,702	992,679
August.....	1,314,263	1,080,177	1,857,545	816,151	956,710
September.....	1,106,316	1,006,619	1,537,058	791,921	1,188,374
October.....	1,106,840	969,588	1,422,045	636,606	825,967
November.....	1,145,415	915,610	1,339,985	714,991	706,770
December.....	1,004,100	670,810	856,378	795,593	.....
Total.....	14,193,305	12,692,381	16,057,555	8,527,360	.....

Bituminous by All-Rail					
	1916	1917	1918	1919	1920
January.....	1,024,194	903,362	879,689	652,116	776,338
February.....	902,543	685,345	856,867	598,135	595,747
March.....	843,698	858,986	1,023,115	603,794	824,329
April.....	688,417	992,506	954,996	728,906	684,112
May.....	804,916	1,335,960	913,737	777,352	990,151
June.....	712,787	1,073,462	987,255	803,605	879,182
July.....	814,829	961,273	1,219,171	1,049,552	1,432,344
August.....	863,094	860,360	1,162,183	1,010,989	1,446,877
September.....	903,647	866,893	1,012,657	1,244,608	1,152,515
October.....	822,318	863,788	896,775	1,308,727	1,190,694
November.....	694,546	724,941	631,117	372,247	1,074,505
December.....	853,635	684,288	576,363	504,592	.....
Total.....	9,928,624	10,811,164	11,113,925	9,654,623	.....



SPOT PRICES, BITUMINOUS MINE RUN, NORTHERN ILLINOIS FIELD, 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from the Northern Illinois field in 1920. Quotations taken from Chicago weekly markets. Through January, February and March, the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in August. Declining prices were checked late in September. Local strikes and shortage of equipment caused a temporary increase but prices quickly reverted downward again. It should be remembered that the greater part of the production was sold on contracts, that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

executives that they must resume their rightful place as part of the steam-using public and that the privileges of a department of government in a state of war are no longer perquisites of the masters of transportation.

APATHETIC MARKET UNTIL APRIL

In spite of heavy snowfall and unprecedented difficulties with cars frozen to the tracks there proved to be nothing like the broad market in March, 1920, that was expected. The various industries seemed well supplied and shippers were able to make spot sales only on the government basis; in consequence distribution went much by favor, both as to territory and as to individual consumers. In some producing districts shipments were on a 30 per cent basis, and on this proportion heavy inroads were made by the carriers. The trade was beginning to get anxious for some decision by the wage commission, then in session. At the end of February cars were taking six weeks to come through to New England destinations. There were days when not a single empty was taken by the New York Central from the New England roads, and surely although slowly visible supplies were being cut down.

Wagon coal, an unfailing sign of impending distress, began to be offered in March, but of the standard grades at the fixed price there was relatively

little spot coal available. High prices for export also made their appeal to political instincts and a limited volume of "emergency coal" forwarded by water with its export price and its accrued demurrage only paved the way for the sharp advances that came later, when regulations were suspended.

In more cases than one the trade agencies were obliged to pay demurrage on chartered ships, only to be loaded with high-priced coal, their own coal at the piers on a contract basis having been seized for railroad or other requirements in New England or elsewhere, regardless of ownership or the normal avenues of supply. It has also borne out that the Regional Coal Committee was hard put to it to find consignees for coal which they had represented as urgently needed. There were cases where cargoes were consigned to brokers, the ultimate destination to be determined by the broker—simply another instance of having cried "wolf" too long and too loud. There was then no urgency on behalf of the industries; they were well supplied for a considerable period, and it was not until the rail route proved its inadequacy in the spring that there was any real anxiety.

CONTRACTS AT GOVERNMENT PRICES

The lifting of price regulations was much discounted. Most of the Pennsylvania shippers were actively soliciting contracts during March. There was

a wide range of quotations, depending upon grade, but it was soon evident that coals available for export and bunker use would be in strongest demand. Taking into account all charges the relative cost of the better grades did not show a very wide margin over those inferior.

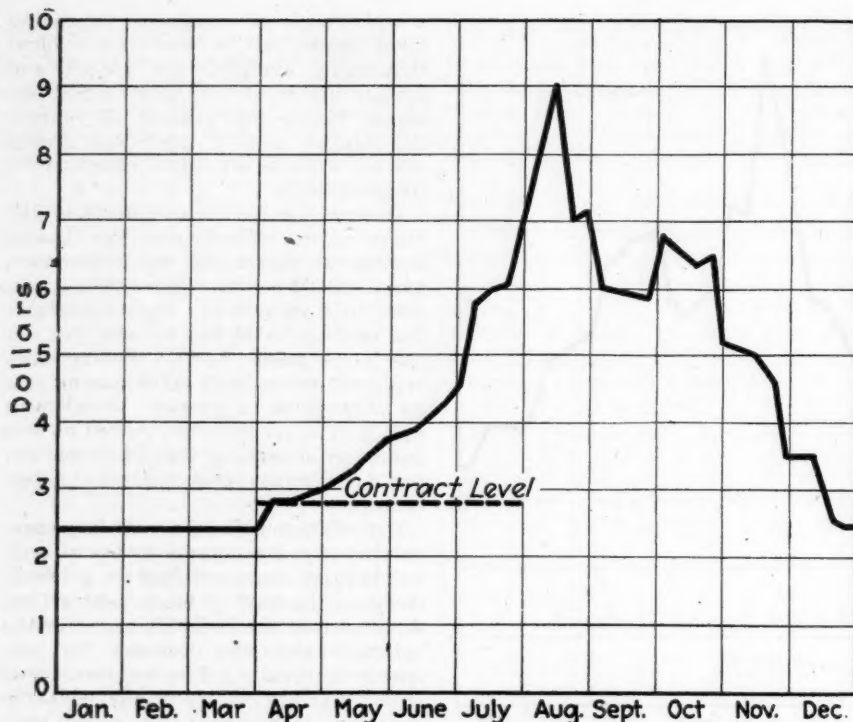
Ordinary grades from Clearfield districts were offered for the twelve months at practically the government basis—\$2.95 per net ton—while Cambrias that were in the Navy acceptable list sold up to \$4.75@5. also per net ton, most prices April 1 having been made subject to such extra mining cost as might later be assessed. Pocahontas and New River were contracted at first hands on a basis of \$4@4.25 per net ton f.o.b. mines plus charges to destination.

The effort to procure a very large proportion of engine supply by the all-rail, or cheaper, route resulted in a breakdown on the part of many contractors. What seemed the desirable move for the railroads also was desirable for consumers generally. The net result was sheer inability of many Pennsylvania operators to live up to the heavy obligations they had undertaken.

SPOT MARKET DEVELOPS IN APRIL

Labor and other conditions in the region grew so unsettled that buyers began to find it extremely difficult to arrange purchases with reliable shippers. The yardmen and longshoremen strikes in New York favorably affected rail movement, some shippers selling at quite remunerative prices and others confining themselves to better deliveries on contract. The switchmen's strike had a notable effect on shipments later on as the trouble spread, and there rapidly developed in May the unbalanced situation that made possible an upward swing in spot prices. Low-grade Clearfields rose from \$3.50 to \$6.50 in a few weeks. Pocahontas advanced from \$4 to \$6 at the mines, and \$9 per gross ton was soon reached f.o.b. vessel at Hampton Roads. Heavy tonnages at the latter piers were moved overseas and for government requirements. What Pocahontas and New River came to New England moved in customary channels, but there was even less placed here on contract than in 1919, a year of extremely low coastwise shipments.

Active buying in Canada lent buoyancy to the current market through May, and prices were bid up to \$7@8 for low volatiles of only fair grade. Early in the season there was a strong feeling in the trade that operators would hardly dare mark up prices beyond \$6 per net ton at the mines, but by June 15 an amazing upward trend was in full swing and the \$11 mark had been passed. There was no sign of price recession and the clamor for quick coal was insistent and continuous. Every wholesale office was besieged with eager buyers. Middle-houses bought of one another, and conservative consumers who had been inclined to await developments became



SPOT PRICES, BITUMINOUS MINE RUN COAL, KNOX COUNTY, INDIANA
5TH VEIN FIELD, 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from the Knox County, 5th vein field of Indiana in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Chicago weekly markets.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in August. The general tendency was downward until Oct. 1, when prices rallied somewhat. By November the decline was again in full sway and soon passed below the figure set by the Indiana Food and Fuel Commission for state shipments. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

now thoroughly alarmed and sought coal at the best price obtainable.

The service order of the Interstate Commerce Commission stipulating priority for cars bearing coal destined (via Tidewater piers) for New England points in the name of J. J. Storrow were ill-advised and proved abortive. Movement had already improved when another makeshift priority was decreed, and it became apparent to the trade that the situation was in reality slowly on the mend. Coal was coming through in less time and embargoes were less frequent. Additional locomotives were put into service, and while there was no perceptible effect upon spot prices for several weeks, it was clear we were gradually emerging from the woods.

ONLY 30 DAYS' SUPPLY IN JULY

Early in July a careful survey of the larger consumers showed slightly over thirty days' average supply, but there was only a slight let-up in demand and certain producers continued in position to exact the limit on price. Conservative interests who, because of embargoes, found themselves with small tonnage of free coal to dispose of, made sales either at contract prices or at only a slight advance. It was hopeless then to expect that New England

buyers would absorb any considerable increase in receipts by water, especially on the price basis that had to be asked, and that was why "emergency coal" efforts brought to bear at Washington were doomed to failure.

PRICES OFF IN AUGUST

By Aug. 15 it was evident a pronounced change had come over the market. After July 4 receipts bulked so large that buyers showed much less concern over the future of the market. There even were cancellations of May and June purchases.

In September Clearfields had eased to \$7.50 @ \$8 per net ton at the mines, and all-rail movement had diminished. Service Order No. 11, especially drawn to meet New England emergency needs, was cancelled. At the same time that there was congestion in high-ash high-volatiles at Baltimore and Hampton Roads there was an actual shortage of low volatiles due on contracts. The order had not worked advantageously for New England, nor for anybody but the shippers of inferior coals, who had been handed a market on a silver platter.

The forty per cent advance in railroad tolls was another retarding factor. This added so much to the delivered cost that there was a distinct sag in

spot buying, and prices shaded off consistently until late in December, when \$3 was reached on fair grades from central Pennsylvania, and he was a right worthy salesman who could find an order for any grade at better than \$4.

SMOKELESS OPERATORS DISSAPPOINTED

The drop in ocean freights from \$20 to \$4.50 and the abrupt change in export demand following closely upon the British strike turned the attention of smokeless operators again to New England, but to no purpose. Aside from a few purchases by a few large utilities this market has absorbed very little spot coal from the West Virginia districts. From \$15@20 per gross ton f.o.b. ship the market has dropped to the vicinity of \$7. As the year closed coastwise freights had slumped to \$2 and less, but still this section was so deeply overloaded with coal that no buying interest whatever could be worked up.

Shipping Board craft have been turned back to the government in squadrons and private owners are striving in every direction to employ their ships from trip to trip.

TRADE PROSPECTS FOR THIS YEAR

As 1921 opens, a few textile and other plants have resumed work on one-half to three-fourth time, not in response to any buying movement on the part of retail distributors but largely to help care for local labor problems. It is difficult at this writing to see where any buying interest can be aroused in the next sixty to ninety days. A few operators are angling for contracts, but the nibbles are going to be half-hearted, at least through January and February.

Shippers have been at pains to establish connections overseas. Exchange, however, is still unstable; and as Europe is beginning to rehabilitate, the American coal industry will have less its own way in the offshore market. Much remains on a saner basis than to many has seemed possible since the spring of 1917.

The Virginian Ry., which serves the Winding Gulf region, is rapidly recovering from the effect of government operation—probably more rapidly than any other railroad in the country. During the year it broke all previous records for certain performances. The average car miles per day during the month of August was 60.90, as against 40.36 for the month of August, 1919. The total number of cars loaded at the mines during the month of August, 1920, was 13,517, as against 9,862 cars for August, 1919, and the best monthly loading for any previous month was 12,251 cars. On Dec. 6, 829 cars, including fifteen 120-ton cars, were loaded at the mines, as against a maximum daily loading of 591 cars prior to 1920. During the month of October, 1920, 581,968 tons were dumped over the pier at Sewalls Point, as compared with 449,800 tons for October, 1919.

Wide Variation in Wholesale Prices Upset Philadelphia Market in 1920

Profiting by Lessons of War Years, Dealers Are Expected to Keep Business as Nearly on a Cash Basis as Possible—Heavy Bituminous Stocks on Hand Will Defer Heavy Buying

BY W. D. HAMMER

PROBABLY nothing upset the anthracite trade more in 1920 than the continued fluctuation of wholesale prices. Company prices for January, February and March were as follows: Egg, \$6.35; stove, \$6.65; nut, \$6.75; pea, \$5.30, and buckwheat, \$3.40. Independent shippers were quite modest, at only 75c. above these figures.

ANTHRACITE

Talk of a miners' strike stirred up the trade until all dealers were clamoring for coal, with only the lightest stocks available. Production was severely curtailed by a strike of the railroad men during April. In May one of the other large shippers, despite the unsettlement of the anthracite mine wage problem, increased prices to the following figures: Egg, \$72.0; stove, \$7.45; nut, \$7.55 and pea, \$5.75 per gross ton. The Independent producers added about \$1 to this schedule.

On Aug. 26 the freight rate on prepared sizes via the Philadelphia & Reading R.R. was advanced to \$2.66, and pea and smaller \$2.38. Starting soon after May, the larger companies had been adding 10c. a ton to the price of the coal, all of which made it difficult for the retail men to keep a standard set of prices, especially as the independents during this time were adding even greater increases than the companies.

The summer was quite unsatisfactory to dealers, as they were far from able to get the amount of coal necessary to meet their orders. Conditions were made worse by another strike of the rail men on June 19. The loss of production occasioned by this strike was never made up. Just as rail conditions were assuming a normal state the miners went out on a strike from Sept. 1 to Sept. 15.

The dealers usually expect better shipments in the autumn, but during the past year, probably because of unusually mild weather, improved tonnage did not begin to arrive until Dec. 1. At the beginning of 1921 company prices were about as follows: Egg, \$7.75; stove and nut, \$8.05, and pea, \$6.40. Quite a few of the independent shippers quoted prices as much as \$2 to \$2.50 above these figures.

For the first nine months of the year steam coals were in the strongest kind of demand, due to the scarcity of bituminous coal, and the company price on buckwheat was advanced by easy stages from \$3.40 to \$4.25 per gross ton at mines. When the demand for steam sizes fell off, the independents, who had been getting as high as \$5 and \$6 for buckwheat, were glad to get \$4.

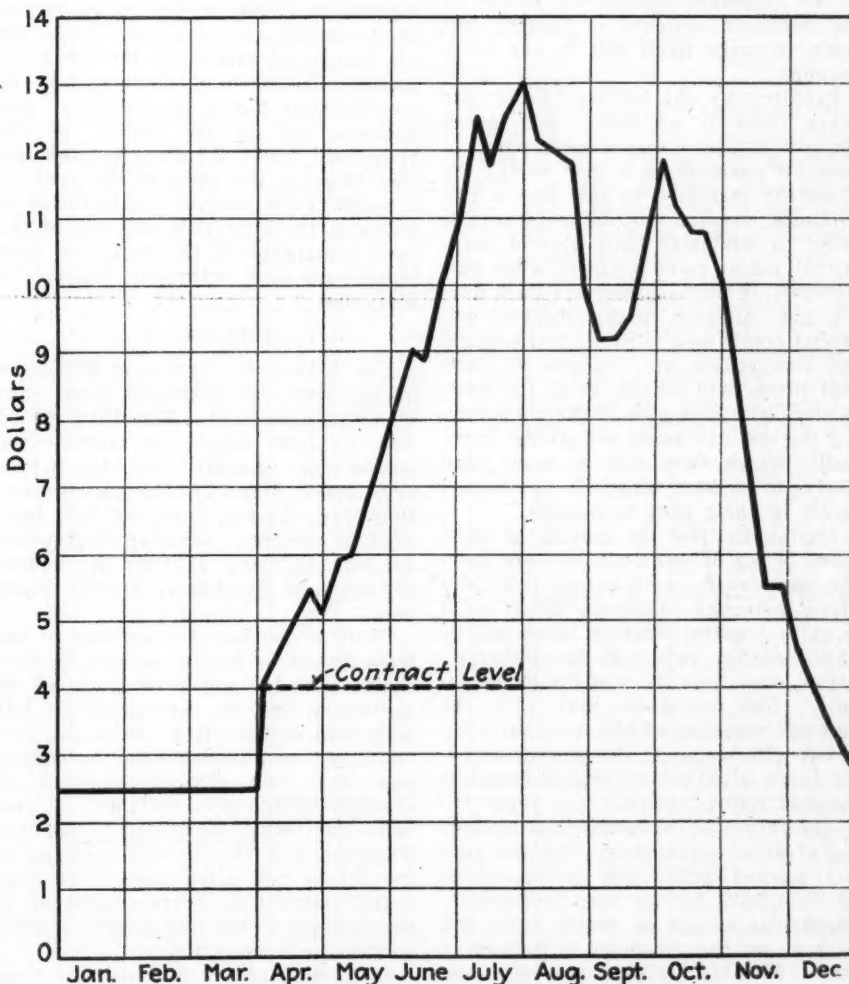
Rice and barley, which had not been particularly strong, became almost unsalable by the beginning of the new year.

BITUMINOUS

From January to March, 1920, soft coal was sold at the government wartime prices, but in anticipation of a relinquishment of governmental control quite a deal of contracting was entered into late in March, for shipment beginning with April 1, at from \$3.75 to \$4 at the mines.

On April 1 the price regulations were removed and immediately there were heavy offerings of spot coal. Prices advanced steadily from the \$2.95 mark, and \$5 coal was soon common. In mid-summer prices had climbed to \$11 and there was a general feeling that the top had been reached, as there was much talk of government regulation again. However, due to the tremendous export trade, which had been growing all summer, spot prices continued to mount and were as high as \$16 late in July, although the average was nearer \$14.

In late summer prices showed a tendency to sag, on account of the industrial let-down, but the anthracite strike early in Sept. once more stiffened the demand and prices again reached \$15. By October the lessened demand for coal, both export and domestic, caused prices to recede until something under \$7 was the price for the best steam coals in November. The decline continued with greater force in December and the



SPOT PRICES, MINE RUN, FAIRMONT DISTRICT, W. VA., 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Fairmont, W. Va., district in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Philadelphia market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak late in July. A swift decline followed, ending in September, after which the price recovered about \$2. From October until the end of the year the decline was steep. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

beginning of the new year finds pool 9 coal selling for \$4.25 at mines, with pool 10 at \$3.40, 11 at \$2.50, and the Fairmont gas coals in pool 34 at \$2.50.

Toward the close of the year there was much talk of contract coal, with very little business closed on account of the uncertain conditions. Both the shipper and consumer seemed to be sparring for position and while some of the larger companies were reported as closing agreements at \$4.50 with their best customers, the trade in general is inclined to hold off. Late in the year the opinion seemed to grow that the original price of \$4.50 announced would have to be considerably shaded for spring business, when the heaviest tonnage usually is put under contract.

Looking forward, there is a feeling that many changes are impending in the anthracite trade. On the whole no one expects that the coming year will be nearly as profitable to the retail men as was 1920. The chief reason for this is the decreased purchasing power of the consumer, which it is thought will begin to make itself felt in the early summer.

Profiting by the lessons of the war years there is no doubt that every dealer will strain the utmost point to keep his business on a cash basis. As a further incentive to this end it can be almost assured that shippers are not going to relinquish their plan of making the dealer make payment when due. However, if business becomes slack during the summer, many dealers will extend credit to a portion of the trade, and competition may become so keen that prices will be cut, as in the past. Dealers who have been in the trade during the last five years are strong financially, which fact, will be more than likely to induce shippers to extend credit in their turn to dealers.

During the last six months of 1920, when prices of commodities were moving downward, coal prices held and often increased. Likewise this year it is quite doubtful whether there will be any material reduction in anthracite prices other than those of the independents. The companies may give the summer reduction of 50c. a ton on April 1, but with wages at the present schedule there is little hope of anything like pre-war figures coming into vogue.

The future of the bituminous trade is one of great uncertainty. The new year has opened with spot prices—about \$3.75 to \$4.25 for the very best coals—apparently as low as mining costs will permit, yet the consumer is inclined to wait. No one, not even the consumer, expects anything like former figures for soft coal, and the buyer is convinced in many instances that present figures are fair. As it stands today everything depends upon the resumption of industry, but with the heavy stocks already above ground it is going to take some time before buying is resumed in earnest.

Another factor that must be seriously reckoned with is the large number of new openings started during the past year, all of which are making a strenuous effort to keep on the market. These

new mines will exert an influence on prices for a long time and no doubt will be an unsettling factor.

The contract situation presents an interesting phase and every one is much in the air as to what the final price for April business will be. While most contract tonnage is placed as of April 1 there is always a certain amount agreed upon at the first of the year. This

seems to be a sort of preliminary step to the regular contracting season. In December just past, following the lead of several of the larger shippers, an appreciable amount of tonnage was closed on the basis of \$4.30 to \$4.50 a ton. The feeling is now growing, however, that this is too high and that a figure nearer to \$4 will be the correct one.

Baltimore in 1920 Had Largest Domestic and Export Demand Ever Known There

Export Loading of Bituminous Amounted to 4,296,679 Gross Tons, Compared with 1,717,342 Tons in 1919—Inadequate Car Supply a Constant Source of Difficulty During the Last Year

EDITORIAL CORRESPONDENCE

FOR the extent of interruptions through government control and regulation, strikes on the railroads and at the mines, for new price levels, for the margin of profit set, for the great increase in overhead charges, for the recording of the greatest export and domestic call in the history of the trade, and finally for the great collapse that came at the close of the year as a result of the general readjustment of business, the year 1920 was one of the most remarkable in the history of both bituminous and anthracite trading in Maryland.

BITUMINOUS

The total export loading at Baltimore during 1920 was 4,296,679 gross tons of bituminous coal. The 1919 record was 1,717,342 tons. By months the record was: January, 139,118; February, 59,462; March, 51,868; April, 313,109; May, 424,614; June, 602,739; July, 290,912; August, 561,694; September, 422,832; October, 711,028; November, 499,442, and December, 219,861 gross tons.

Early in January the troubles of the trade began as the car supply became shorter and the government placed an ineffective ban on exports which left little coal at the piers. With the central coal commission's hand on embargoes coal men shipped as much as possible on high price contracts. Unreliable car supply continued throughout February and March with loadings at the mines not much more than one-fourth normal, and unemployment in the Georges Creek and nearby regions general as a consequence.

In March loads at the Baltimore piers were as low as one hundred cars and at times wiped out for a few hours; industries dropped to the danger line of supply and prices on individual sales began to mount. The trade was restive under heavy New England movement on priority and contracts were withheld in face of government technical maxima, although a few contracts were noted at from \$4 to \$4.50 a net ton f.o.b. mines for best grades.

April saw prices beginning to jump, with movement below 50 per cent of

normal. Export trade began to offer up to \$5 net at the mines, and later, with car supply varying from 40 to 70 per cent, went to \$5.50 and a few sales at \$6. The rail strike at this time saw many coal men patriotically aiding the government by disposing of coal at the old \$2.90 figure when as high as \$6 was to be had in open trading.

Export business came in heavily in May. Best steam and gas coals readily commanded a mine basis of \$6.25 to \$6.50 per net ton f.o.b. mines, and the rush caused many delays in loading, from thirty to forty ships being tied up off the piers at one time. At this time the city authorities, who had refused to make a contract early in the season protested because they had to pay as high as \$14 a ton for anthracite and \$9 a ton for soft coal delivered. Before the month ended as high as \$7.50 to \$7.75 was paid at the mines for export coal.

Prices continued to rise in June, \$8 to \$8.25 net being recorded early in the month at the mines. Domestic users, seeing the market still rising instead of falling, got heavily into the game also, and a scramble resulted over the limited deliveries here under a 40 to 50 per cent car supply at the mines. By mid-June prices of both steam and high-volatile screened of best grade were running riot at the mines at from \$9 to \$10, and by the end of the month from \$11 to \$12 and in some cases as high as \$13. An odd situation developed then when on priority for public service and municipal use coal was offered as low as \$7 to \$8 at the mines.

July brought first the end of outlaw rail strike and then the end of the export ban. Government diversion to the Northwest and New England continued, and prices for best steam and gas coals were from \$10 to \$13 per net ton f.o.b. mines. Car supply while a little better, was not sufficient to break prices.

The real break came in mid-August, and coal over the balance of the month, while held firmly by some, was sold by other at from \$7.50 to \$9 per net ton f.o.b. mines.

Through September the market fluctuated between \$8 and \$10 for best coals

for the most part, and October came in fairly strong with both high-grade gas and steam coals held at \$9.50 to \$10.50 per ton, f.o.b. mines. Toward mid-October prices went from \$1 to \$1.50 higher again, but the end of the month saw a new retrograde movement when export demand for future shipment began to decline and home demand lessened as many factories began to curtail or shut down under the growing process of business readjustment.

Recession in November was rapid and each day saw cheaper coal. By the middle of the month and thereafter excellent coals were offering at from \$6 to \$7 per net ton f.o.b. mines, and as the month came to a close they had dropped to \$6 with more offerings and fewer takers.

Early in December good coals were widely offered at \$4.50 to \$5 at the mines, and only a continued shortage of cars prevented a more sudden break. Weaker and weaker grew the market and at the close of the old year best steam coals were quoted at the mines per net ton at from \$4 to \$4.25, intermediate coals around \$3.50 and lower grades at \$3 or a little less. Best gas was freely offered at \$3.50 and run-of-mine around \$2.75. Car supply had jumped to around 100 per cent toward the close of the year, and coal began to pile up at tide.

ANTHRACITE

The hard-coal trade had a very trying year in 1920—one full of more uncertainties than ever before experienced here. Failure to fix prices in the spring, as usual, caused a big upset, and pending the action of the Washington conference the old October, 1919, schedule of delivered prices was run over January, February, March and part of April, as follows: Broken, \$12 a gross ton; egg, \$12.50; stove, \$12.75; chestnut, \$12.85; pea, \$10.25, and buckwheat, \$8.20.

In April the trade in many cases refused to book any more orders at the old October schedule, finding that the coal was not coming in. Over the summer in fact the trade got only about one-third of its usual run and fall was met with more than 20,000 homes in Baltimore entirely out of coal. A tentative schedule, an advance of \$1 a ton on that given above as for October previous, was adopted in May pending action of the wage conference in Washington. At this time many dealers were paying premiums of from \$1.10 to \$1.50 on much of their coal. During early July, while no official schedule was set, many dealers advanced prices of white ash 25c. a ton and Lykens Valley 50c. a ton, to meet mounting premium costs, and later in the month the following schedule was set: Hard white ash, broken, \$13.75; egg, \$13.75; stove, \$14; chestnut, \$14.10; pea, \$11.25; buckwheat, \$8.70. Sunbury prices were the same as white ash. Lykens Valley was set at \$14.70 for egg, and \$15.10 for stove and chestnut.

The various freight and wage increases that came over summer are

familiar to the trade, and the end of August, with the last freight jump adding \$1.04, while the light shipments of company coal coming in stood the trade from \$7.85 to \$8 for popular sizes, and the larger run of independent coal all the way up to \$9, brought the trade here face to face with a serious situation. It was natural, therefore, that the trade fixed a new schedule ranging up to \$15.75 for white ash, as follows, on Aug. 26: Broken, \$15.50 per gross ton; egg, \$15.50; stove, \$15.75; chestnut, \$15.75; pea, \$13 and buckwheat \$10. Those prices held over the end of the year and are still in force.

After a marked falling off in supplies over spring, summer and early autumn and a premium line of coal in the autumn and early winter that caused some dealers to set prices above the local schedule—one who was paying as high as \$11 a ton at the mines fixed his retail schedule here for several weeks at \$17 a ton—relief began to come by heavier shipments in November. In November and December a total of 135,000 tons was received here, and the heavier movement still continues. The acute shortage has been covered by this movement and a mild winter.

St. Louis Coal Market in 1920 Gave Little Comfort to Domestic Consumer

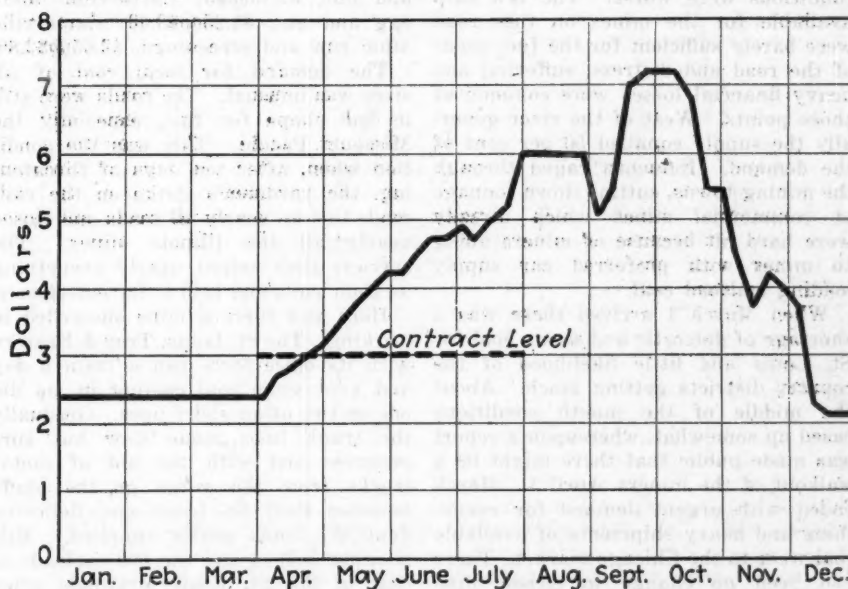
Railroads Confiscate What They Need, Speculators Manipulate or Bribe, According to Circumstances, While Householders Shiver or Hope — Governor's Committee Brings About Alleviation of Conditions

EDITORIAL CORRESPONDENCE

AS A GRIM reminder of the late war, the coal trade opened 1920 with Fuel Administration prices in effect. As a result of the miners' strike of November, 1919, and the shipment west of thousands of Eastern line hopper cars, the kind of equipment needed—flat bottoms—were not available. Hoppers could not be unloaded for local reasons and the trade was embarrassed. The railroads were all short of coal and the reluctance of consumers to take coal in hopper equipment gave the roads opportunity to help themselves to coal.

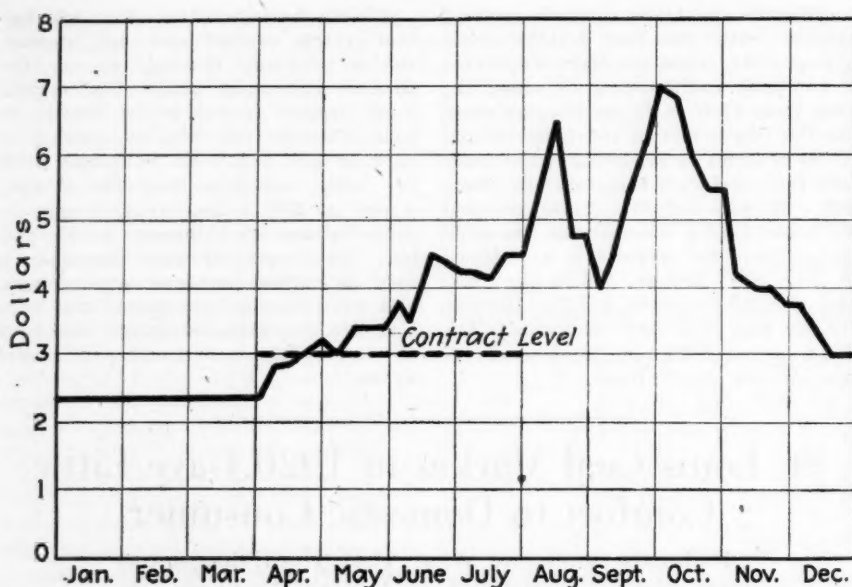
Toward the end of January the steam market picked up and screenings again held their own. The bulk of the coal for the St. Louis market was from the Mt. Olive and Standard fields, and some Carterville moved in from Williamson and Franklin County.

Although warmer weather prevailed at the beginning of February, the month as a whole was a seasonable one. Embargoes with the inevitable accompaniment of injustices prevailed throughout acute on record and miners were glad the month. Car shortage was the most



SPOT PRICES, BITUMINOUS MINE RUN, STANDARD DISTRICT, ILL., 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Standard district of Illinois in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from St. Louis market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 to Aug. 1 and reached their peak late in September, after which the decline was precipitate. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.



SPOT PRICES, BITUMINOUS MINE RUN, MOUNT OLIVE DISTRICT, ILL., 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from the Mount Olive district, Illinois, in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from St. Louis market.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak early in October, although a sharp rise and fall was observed in August. After Oct. 1 prices dropped swiftly and touched the \$3-mark at the end of the year. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

acute on record and miners were glad to overlook chances for trouble and worked the one and two days per week that cars were furnished. In southwestern Missouri and points in Arkansas served by the Missouri Pacific R.R. conditions were worse. The few cars available for the mines on that road were barely sufficient for the fuel needs of the road and distress, suffering and heavy financial losses were common at those points. West of the river generally the supply equalled 50 per cent of the demand. Influenza raged through the mining towns, cutting down tonnage at commercial mines which already were hard hit because of miners going to mines with preferred car supply loading railroad coal.

When March 1 arrived there was a shortage of domestic and steam coal for St. Louis and little likelihood of the country districts getting much. About the middle of the month conditions eased up somewhat, whereupon a report was made public that there might be a walkout of the miners April 1. March ended with urgent demand for everything and heavy shipments of available coal went to the Chicago market. There had been no change in either mine or retail prices for the first quarter. Very little anthracite came through—possibly twenty-five cars in all—and no smokeless, with nothing from Arkansas.

At the beginning of April there was much uncertainty. The wage scale commission's award was not satisfactory to the Illinois miners and about one-third of them refused to work in some fields.

The Fuel Administration prices were

lifted April 1, the new prices per net ton at mines being as follows: Standard 6 in. lump, 3 x 6 egg and 2 x 3 nut, \$2.75@\$.3; Standard 2 in. lump, \$2.75@\$.285; Standard mine run and screenings, \$2.50@\$.260; Mt. Olive lump, egg and nut, \$2.75@\$.3; Cartersville lump, egg and nut, \$3.25@\$.340; Cartersville mine run and screenings, \$2.65@\$.280.

The demand for local coal of all sizes was unusual. The roads were still in bad shape for fuel, especially the Missouri Pacific. This was the condition when, after ten days of threatening, the yardmen's strike on the railroads tied up nearly all roads and closed nearly all the Illinois mines. The carriers then seized nearly everything on their rails and held it for emergency.

Here and there a mine succeeded in working. The St. Louis, Troy & Eastern with its office force ran a train a day and kept some coal coming in, as did one or two other short lines. Gradually the trunk lines made slow but sure progress and with the aid of motor trucks from the mines on the bluffs between East St. Louis and Belleville kept St. Louis partly supplied. Mild weather helped and the 500 carloads of coal in the St. Louis terminals when the trouble started were distributed carefully.

One of the most arrogant abuses known in the trade appeared about that time, when ex-railroad men bought and sold cars to coal speculators, who controlled the movement and in many instances evaded the embargoes. Some of these speculators could not make \$100 a month at honest work, but cleaned up as much as \$10,000 a month

by the "assignment" of cars, while honest operators who would not become a party to these practices had idle mines.

Without warning on July 19 miners in the Springfield (Ill.) district began quitting in sympathy with the drivers and draymen who asserted they were not given a reasonable increase in the wage scale effective April 1, and in a few days all the Cartersville, Mt. Olive, Duquoin and Standard fields were idle, except for a mine here and there where for the most part the bonus system was in effect.

The unusual feature was that the public of the Middle West was in sympathy with the strikers. This brought St. Louis face to face with the most serious coal famine on record. The carriers promptly held all coal in transit for their own needs. It was at first thought the trouble would be settled in a few days, but when it developed that the dispute could be adjusted only by a general conference, the little coal being mined sold for \$8@\$12 at the mine.

October saw the first slipping from monumental prices to depths that at the end of the year were bitter for the Standard shipper. The industrial depression became worse. The outside markets of a few months previous—Ohio, Michigan, Indiana, Canada and Chicago—began to cut off shipments. The Western and Northern markets were fair. Screenings dropped to \$4 and continued to decline. There was a grand rush by operators then to get railroad contracts.

Domestic coal, of course, became scarce. It developed a condition that made country districts frantic for coal. Standard lump was as high as \$8 and \$9 and hard to get. Mt. Olive was going on contracts chiefly and hardly any Cartersville moved west of the river. The unscrupulous element boasted of \$10 coal from the independent mines in Williamson County and in the Duquoin field. In the Big Muddy field at Murphysboro similar prices were asked.

The country situation was so menacing that Governor Gardner appointed a committee consisting of Attorney General McAllister and the Public Service Commission to take such action as they found necessary to obtain coal for towns in Missouri. The Public Service Commission had already acted for the state institutions and public utility plants. This committee met in St. Louis on Oct. 12 with the representatives of all the Missouri carriers and representatives of Illinois coal operators. A committee was appointed with Henry Miller, president of the St. Louis Terminal, as chairman; S. E. Cotter, vice president of the Wabash, and John Cannon, of the Missouri Pacific R.R., representing the carriers, and W. J. Jenkins, of the Consolidated Coal Co.; John Henderson, of the West Virginia Coal Co., and F. A. Aid, of the Aid Coal Co., representing the Illinois operators from the Standard, Mt. Olive and Cartersville fields. F. J. Wallace was selected to procure and distribute coal.

Loss in Output of 8,000,000 Tons in Eastern Ohio Caused by Poor Car Supply

Despite Numerous Obstacles, Production in 1920 Exceeded That of Previous Year by Nearly a Million Tons—Acquisition of Two Large Undeveloped Tracts Presages Early Expansion of Operation

BY K. M. PINAIRE

DESPITE the many negative factors which prevented maximum production during the year, the estimated output of the eastern Ohio No. 8 field, embracing some 170 mines, for 1920 exceeded that of 1919, as indicated by the following table:

ESTIMATED PRODUCTION OF COAL AT 170 MINES IN EASTERN OHIO
(In Net Tons)

	1920	1919
January.....	1,360,000	1,108,400
February.....	1,109,000	797,000
March.....	1,276,000	917,000
April.....	957,000	1,150,000
May.....	1,121,000	1,911,570
June.....	1,353,250	1,927,100
July.....	1,594,000	1,745,500
August.....	1,670,700	1,533,000
September.....	1,493,500	1,652,500
October.....	1,488,400	2,174,300
November.....	1,520,000	*3,774
December.....	1,500,000	*795,530

Totals..... 16,441,850 15,715,674
* General strike, six weeks, November and December.

The potential annual capacity of these mines is approximately 30,000,000 tons.

Car supply for the year was below normal, for the first six months averaging little better than 50 per cent of requirements, which resulted in a loss of at least 8,000,000 tons for the year. Service Orders of the Interstate Commerce Commission giving priority to the mines on open-top equipment and to movement of coal in the Lake trade effected an improvement in the car supply and production, as is indicated by the following percentages of full time operation by months:

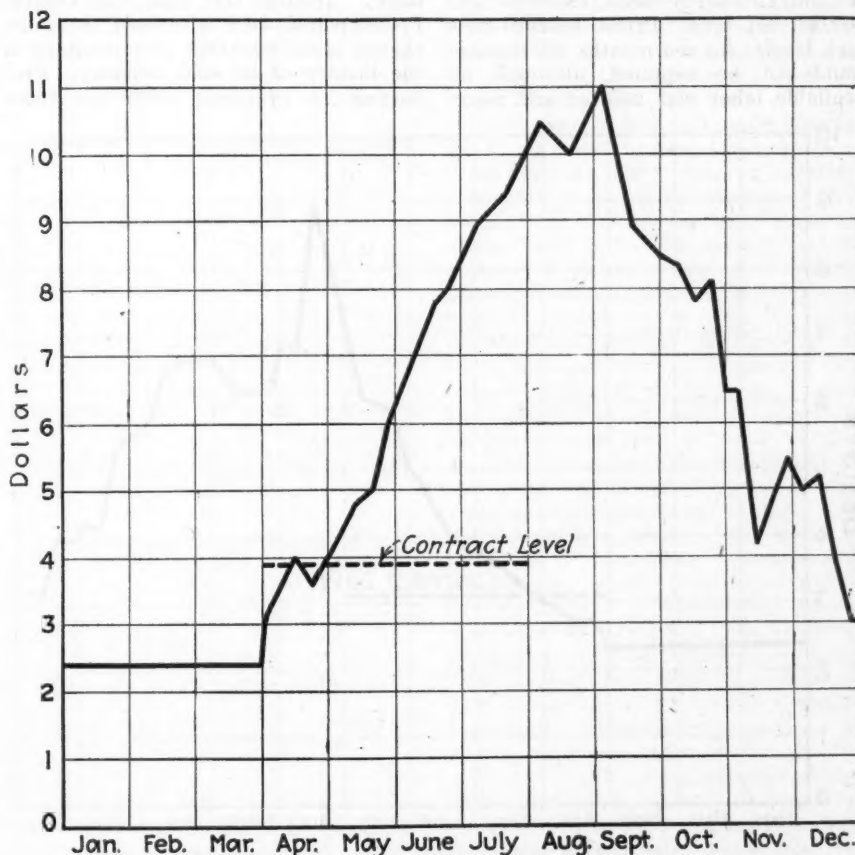
January.....	63%	July.....	66%
February.....	47%	August.....	73%
March.....	47%	September.....	76%
April.....	48%	October.....	87%
May.....	50%	November.....	74%
June.....	55%	December.....	71%

Mine labor was in a dissatisfied state of mind all year even though a 14 per cent advance in all wages was granted in Dec., 1919, and 13 per cent more in April, 1920. Agitators were particularly active in fostering unrest, mines were undermanned, and labor which had left the field during the coal strike to obtain employment in other lines of industry was slow to return. Sporadic local strikes were frequent and increasing. In August day and monthly men were given an additional wage increase of \$1.50 per day, but dissatisfaction apparently was not appeased, for there was an outlaw strike in the district late in September which closed about half the mines for a week. Constant labor shortages and agitation, which lowered efficiency, contributed to underproduction during the year. By the end of the year an additional supply of labor was available.

Increased wages to miners, a 40 per cent increase in freight rates, and the threat of a coal famine caused wide fluctuation in demand and prices. By August Ohio retail dealers were short of coal and were unable to fill orders on their books from thousands of householders who wanted to lay in their winter's supply. To increase shipments of coal to these dealers committees of eastern Ohio operators in September, acting with officials of cities and towns, developed a rationing plan and consigned sufficient fuel to needy points to take care of the situation. By late November, with moderate weather conditions, retail dealers were able to get all the coal they required.

Considerable progress was made in coal-mine development, consolidations, and the passing of undeveloped coal acreage into active hands. A notable achievement was that of the Youghiogheny & Ohio Coal Co., which developed and had on an operating basis early in the year the Dorothy and Budd mines on Little Short Creek, near Yorkville, Ohio, with a combined daily production capacity of 4,000 tons. A new mining town arose—Glen Robbins, named after Mr. S. H. Robbins, president of the Youghiogheny & Ohio Company. These new mines are equipped with the most modern labor-saving devices and Glen Robbins is rapidly becoming one of the prettiest of the newer towns in the eastern Ohio field. Its one thousand residents are living in comfortable bungalows fronting on concrete streets, and each home is equipped with modern conveniences. The town was built by the Youghiogheny & Ohio Company to house its employees.

During July the Youghiogheny & Ohio Company also took over the property of the Glens Run Coal Co., comprising the Edgar mine, at Dillonvale, Ohio, and the Rush Run Mine, at Rush



SPOT PRICES, MINE RUN, PITTSBURGH NO. 8 DISTRICT, OHIO, 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Pittsburgh No. 8 district of Ohio in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Cleveland market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1919, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak early in September, after which the decline was steady until the middle of November. Following a temporary strengthening, the decline continued throughout the balance of the year. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

Run, Ohio., Jefferson County, with a total capacity of 2,200 tons per day.

The Rosemary Coal Co. about mid-year took over Virginia Hill mine No. 1 of the Cleveland-Belmont Coal Co., at Lafferty, Ohio, with a capacity about 1,200 tons per day. It has since been operated as Rosemary No. 3. The Elm Grove Mining Co. in July acquired the property of the Oco Coal Co., Oco Mine, Lafferty, Ohio. It is still operated under the name of Oco Mine and has a daily capacity of 1,000 tons. Headquarters of the company are in Cleveland and J. A. Paisley is its president.

Two large tracts of undeveloped coal lands along the Ohio River in Monroe County, near Powhatan, were acquired during the year by large operating companies—16,000 acres by the Marcell Coal Co., and 11,000 acres by the Cleveland & Western Coal Co., both of Cleveland. Engineers are at work and it is understood that the properties will be developed to an operating basis as soon as railroad extensions can be built and equipment installed. Model mining towns will be erected on the properties.

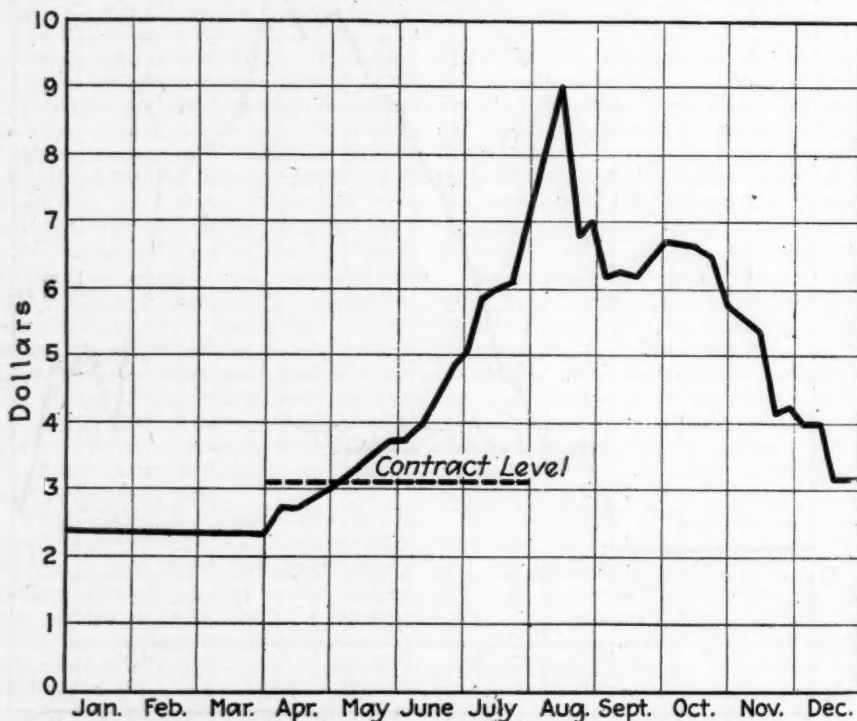
Central Pennsylvania Output in 1920 Was Nearly Normal

For Ten Months Operators Were Unable to Keep Pace With Demand, Though All Available Labor Was Employed and Bonuses Paid—This Field Promises to Supply Usual Quota in 1921

By D. E. SELL
Altoona, Pa.

PRODUCTION of coal during 1920 in central Pennsylvania exceeded 58,000,000 net tons. Prices reached new high levels; for ten months the demand could not be supplied, although all available labor was utilized and many

operators paid large bonuses to mine labor. During the year the central Pennsylvania field witnessed the most chaotic conditions that ever obtained in the history of its coal industry. Production as compared with the three



SPOT PRICES, BITUMINOUS MINE RUN, CLINTON AND LINTON
4TH VEIN FIELD OF INDIANA, 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from the 4th vein Clinton and Linton, Indiana field in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Chicago weekly markets.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in August, declined rapidly until September. After a brief rise, figures again took a downward course and before the end of the year had passed below the figure set by the Indiana Food and Fuel Commission for shipments inside the state. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

preceding years maintained a fair average, being only half a million tons below 1917 and a little more than two million tons below 1918, the high record year for the district.

Two prices prevailed during the year: contract and spot. Contract prices ranged from \$3.50 to \$4.50 at the end of the year while the spot market ranged as high as \$13 a ton. The peak was reached in July, when purchasers from all over the country were in the field bidding for coal.

Much of this high-priced coal went into New England and much more was purchased by agents and brokers for foreign shipment. The spot price began to drop as the demand decreased and by the close of 1920 coal was a drug on the market at \$3 per ton and operators were begging for purchasers. Because this figure is less than the cost of production many of the smaller operators were compelled to close down their operations, it being estimated that fully 40 per cent of the mines in the field were thus affected.

LABOR REVIEW

Labor conditions were unsettled and there were numerous strikes and shut-downs. Violations of the scale agreement, bonuses and amounts demanded in excess of wage-scale agreements were a constant source of trouble to the operators. Some operators granted bonuses on the strength of the high spot prices. Mines shipping on contracts, however, found it very difficult to make both ends meet.

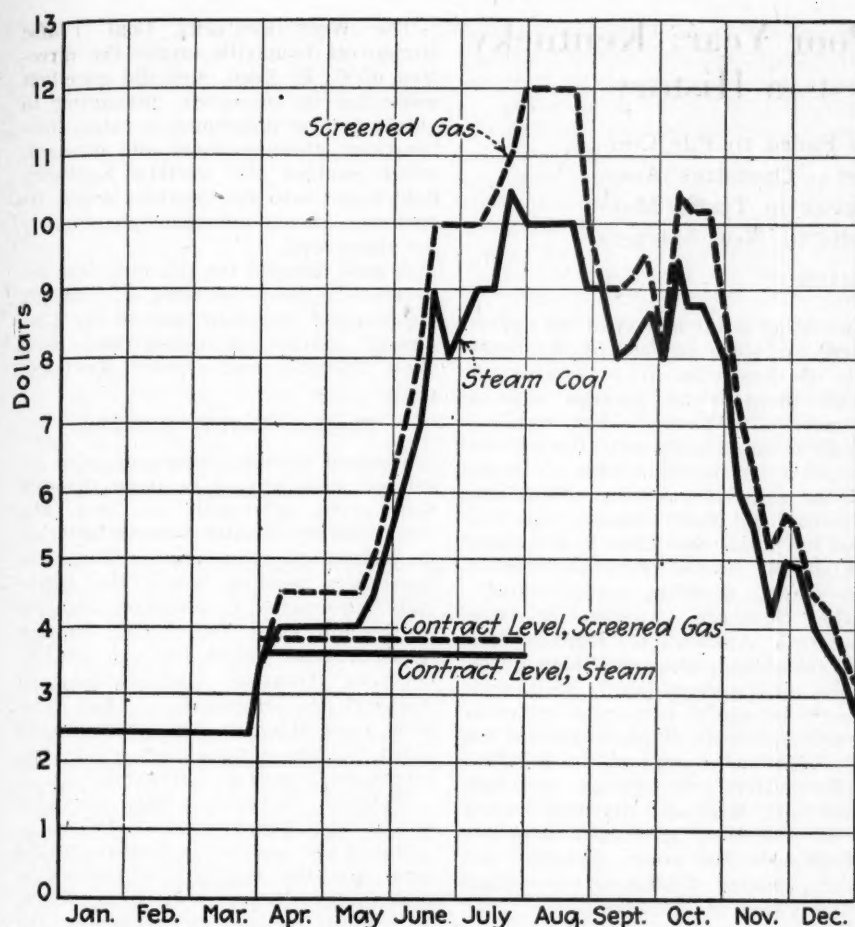
At the close of the year with prices down, operators who paid bonuses began rapidly adjusting their rates and reducing wages to the union scale. As a result of the Central Competitive field joint conference in July and August the central Pennsylvania field was forced to increase wages for day labor \$1.50 a day on August 16.

Operators in the central Pennsylvania field assert that the so-called adjustment of inequalities in the U. S. Bituminous Coal Commission's award was not an adjustment of inequalities but the creation of a flagrant inequality.

CONSTITUTION TROUBLESOME

The car situation proved to be a troublesome one for the mine operators in the central Pennsylvania field. Operators with contracts to fill could not get cars as fast as they could load them. The big demand for coal at spot prices created an additional demand for cars that the railroads leading into the field had not anticipated.

The rulings of the Pennsylvania Public Service Commission and Interstate Commerce Commission worked hardships upon the small operators, putting a stop to the loading of coal on cars at what are known as wagon mines—those having no opening near a railroad and which depend upon loading the coal from wagons. There are a large number of these mines in the central Pennsylvania field and most of those without a local market were compelled to cease operations for a time.



SPOT PRICES, BITUMINOUS MINE RUN AND GAS COALS,
PITTSBURGH FIELD, PA., 1920

Diagram of spot prices, in dollars per net ton, of steam mine-run and screened gas bituminous coal from the Pittsburgh field of Pennsylvania in 1920, compared with the contract market prices for the same coals at the beginning of the coal year in April. Quotations taken from Pittsburgh weekly markets.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in July. Demand for gas coals held better than for steam, coming out of a decline in October. However, this was only temporary and thereafter the decline was steady. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

During the year there were a large number of new mines opened throughout the field. Some of them are large operations and were barely opened when the market slumped but the operators are proceeding to open up, build tipples, sidings, etc., and be ready for the demand when the market again opens.

Many valuable tracts of coal land in

Clearfield, Cambria and Somerset counties changed hands during the year and at prices far in excess of any heretofore paid, some of the deals involving millions of dollars.

HOUSING CONDITIONS IMPROVED

Several new towns have sprung up during the year, especially in northern

Cambria County, where the coal operators were especially active and where they look forward to putting their operations on a permanent basis. Many houses were erected for the miners, the operators feeling that the greatest efficiency is obtained where the men are properly housed.

Ten per cent of the entire bituminous coal output of the United States comes from central Pennsylvania. Fifty million tons will be produced during 1921 and as much more as may be the share of this field of the demand over and above five hundred million tons. Production costs in central Pennsylvania, however, must be materially lowered.

Western Kentucky Coal Proves Its Merit After Long Struggle

In past years, when the coal-consuming public measured the value of coal by its reputation rather than its merit, it was contended by many, through lack of knowledge, that western Kentucky coal was an inferior grade of steam coal. At that time the general attitude of the coal-consuming public was not conducive to increased production in western Kentucky coal—not that the quality of the coal at that time was not as good as at present, but the consumers had refused to be shown.

After many years of constant struggle in an effort to keep the wolf away from the mine shaft, western Kentucky operators succeeded in placing a fair tonnage in nearby markets, thus enabling them to keep body and soul together. Previously western Kentucky operators were confined to nearby markets, as freight rates were not sufficiently reasonable to enable them to enter the more distant markets. Although subjected to these handicaps, coal production in western Kentucky increased more than 50 per cent during the period from 1912 to 1916.

During the World War, when coal demands were abnormal, western Kentucky coal was given a fair trial by hundreds of steam-coal consumers in the Middle West, who have subsequently adopted it. Thereafter the demand for Western Kentucky coal increased to such an extent that today, regardless of unfavorable freight rates, it is being marketed over a territory extending from North Dakota to Florida and from Ohio to Texas.

During the last year and a half Northern and Eastern capital has become interested in the field and there is further evidence of growth in the fact that the number of mines has increased from 140 to 222.

The western Kentucky coal operators, recognizing the importance of organization, maintain the West Kentucky Coal Bureau, which is furthering co-operation among the operators and improving operating and marketing conditions in the western Kentucky fields. The officers of the bureau are F. D. Rash, president; C. W. Taylor, vice-president, and Charles E. Reed, secretary.

PRODUCTION OF COAL IN CENTRAL PENNSYLVANIA, 1917-1920*
(In Net Tons)

	1917	1918	1919	1920
January.....	5,103,621	4,637,131	5,114,716	4,561,711
February.....	4,351,331	4,666,093	3,148,078	3,763,510
March.....	5,260,725	5,318,134	3,482,408	5,195,577
April.....	4,497,326	5,084,292	3,404,602	4,428,955
May.....	4,840,767	5,214,048	3,649,957	4,286,615
June.....	5,044,325	5,393,048	3,831,680	4,621,636
July.....	4,851,237	5,590,414	4,386,820	4,890,843
August.....	5,139,502	5,702,102	4,832,219	5,160,977
September.....	4,716,933	5,104,013	4,865,074	5,347,084
October.....	5,311,568	5,265,562	5,580,692	5,331,119
November.....	5,174,841	4,137,915	1,205,294	5,170,560
December.....	4,366,641	4,401,611	3,044,841	5,413,829
Totals.....	58,658,817	60,515,118	46,546,381	58,172,416
Monthly average.....	4,888,235	5,042,927	3,878,865	4,847,701

* Including local sales, coal coked and boiler fuel.

Louisville Jobbers Had Poor Year; Kentucky Operators Had Best in History

When Prices Rose Producers Failed to File Contracts, Selling in Open Market — Operators' Associations Render Excellent Service in Traffic Matters — Kentucky Coal Spreads to New Markets

BY A. W. WILLIAMS

JOBBERs in Louisville for a while in 1920 received a commission of from 15 to 25c. per ton until coal became hard to sell, after which more was offered by operators for handling the coal. The jobber did not have a big year because many in the trade were not in a position to contract for mine output and were unable to obtain any coal during the rush. The operators had a ready market for production and sold direct. On the rising market operators failed time and again to fulfill contracts, and sold in the open market, filling contract orders only when there was a buying lull, and when they had excess supply.

The operators probably had the best year in their history. After April prices rose steadily, reaching well over \$10 a ton for high-grade gas lump and mine run.

Industrial demand was good, buyers in the fields bidding up prices.

Kentucky operators suffered from dis-

crimination in the matter of car supply. There are some sections of the Louisville & Nashville Ry., however, on which there is no possible hope of operators ever having a car supply to handle mine capacity until the railroad spends a considerable sum in laying heavier rails, lengthening sidings and providing additional sidings. The railroad has announced that it will spend \$11,000,000 in the Kentucky section this year to give the needed relief.

The Southern Appalachian Coal Operators Association, Harlem Coal Operators Association and Hazard Coal Operators Exchange jointly maintained a traffic bureau at Louisville, under the direction of C. D. Boyd, which did fine work for the operators in handling traffic matters and fighting for traffic relief. Mr. Boyd also procured a number of reductions in freight rates and straightened out many incorrect conditions, saving thousands of dollars annually for the members.

The West Kentucky Coal Traffic Bureau at Louisville, under the direction of C. E. Reed, also did excellent work for its operators, managing to obtain several reductions in rates, combinations, through rates and changes, which enabled the western Kentucky field to get into new markets where its fuel was almost unknown, particularly for steam coal.

A good demand for this coal was developed in the Northwest, at Chicago, Detroit and elsewhere and in the Cincinnati market in competition with West Virginia and eastern Kentucky coal.

DEVELOP EXPORT BUSINESS

Western Kentucky operators also developed some export business through Gulf ports, principally to Cuba, and went into the South Atlantic district, to Atlanta and other points. There are cases now pending before the Interstate Commerce Commission relative to through rates for export through South Atlantic points, through rates to northern Arkansas and southeastern Missouri, and elsewhere. J. Van Norman, local attorney, has accomplished much for the organization before the Interstate Commerce Commission.

Western Kentucky was idle for several weeks on account of strikes.

One of the interesting features of the year was the purchase of mines in southeastern Kentucky by Henry Ford. Mr. Ford refused to recognize the union, and a strike was called, but the men could not go out after wages were raised above the union scale.

Statistics of river shipments to Louisville show that with the exception of October and November there were deliveries during every month of the year, the total being 64,600 tons by water, as against 52,000 in 1919. Prospects are that with increased railroad freight rates and cheap fuel for operating steamers there will be an increased movement by water during the coming year.

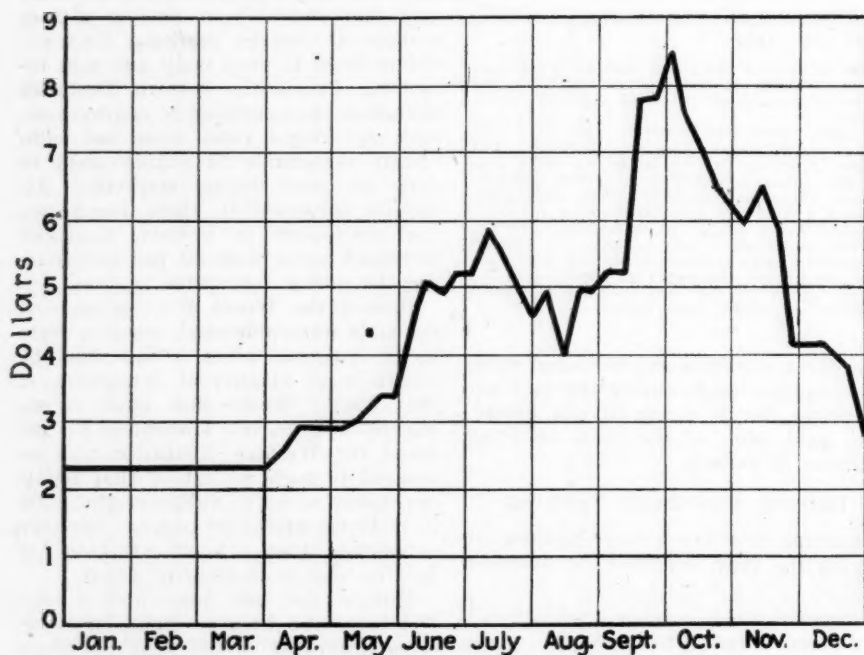
NEW COMPANIES ORGANIZED

During 1920 there was a large number of new coal companies established in the state. They came in rapidly during the era of high prices, many being mere wagon mines, but there were several new companies developed on a big scale, especially in the Elkhorn field. One stripping operation, the Sunlight Coal Co., started in western Kentucky late in the year.

A number of wagon mines used their profits to improve their properties, many mines being equipped with tipplers, trackage, electric drills, punching machines, and other modern devices during the year.

Some few mines in the state lost money during 1920, but in most of such cases there was gross mismanagement somewhere or such large salaries were paid to officers that there was no possible chance of making a profit.

Many operators believe that a return of conditions such as prevailed after the armistice is at hand and that by April



SPOT PRICES, BITUMINOUS MINE RUN, SPRINGFIELD DISTRICT, CENTRAL ILLINOIS, 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Central Illinois Springfield district in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Chicago market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April and reached their peak in the middle of August. A sharp decline followed in the next two weeks, after which came a brief period of fluctuation before the general decline commenced in October. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

prices will be much higher and will continue climbing, but others can see no such prospects. On the other hand, still others are of the opinion that there will be a revival of industrial buying as soon as present winter stocks are depleted.

An interesting fact is that lime, cement and clay product dealers have little confidence in the continuance of present low prices for coal. In these lines coal and labor are the big costs, and these manufacturers report that as labor isn't much cheaper than it was, they won't reduce prices on their materials until they are satisfied that coal prices will continue under \$4 a ton for mine run, it being felt that it is easier to maintain a price than to increase it after having reduced it.

OPERATORS' MAXIMUM \$6 TON

During the early autumn months the Federal Grand Jury at Covington, Ky., following an investigation of coal companies' books, decided that \$5 was a fair maximum price for lump coal for eastern Kentucky operators. Eventually, however, it was agreed to allow them a gross maximum of \$6 a ton. In the event that some of the Blue Gem mines, operating on thin seams, were not to be able to produce at that price, they would have to show their operating cost if called upon. The regulations never amounted to much, however, as just after they become effective prices began to fall.

Western Kentucky was not bothered by regulations, as Judge Walter Evans, in the Federal Court, at Louisville, refused to consider the Lever Act as con-

stitutional, and threw out all cases brought before the western Kentucky division of the Federal Court.

At the spring session of the Kentucky Legislature a warm fight was launched for a tonnage tax on coal. This was defeated, but another effort was made in the autumn to have a special session of the Legislature called to place a tonnage tax on coal, principally for the benefit of good roads. S. Thurston Ballard, Lieutenant Governor of Kentucky, a coal operator and miller, is one of the strongest backers of the tonnage-tax plan, as he is a good-roads man. He has been advocating passage of uniform coal tonnage tax laws in all bituminous states so as to give all operators and all fields a fair deal without discrimination.

Kentucky, according to Geological Survey reports, is now fifth in the list of coal-producing states. With railroad facilities equal to its present capacity, however, the state would rank much higher.

The outlook for 1921 is a hard one at best. No one has any very decided opinions concerning what may or may not happen, it being generally believed that the best policy is to wait it out. However, western Kentucky can say that it has made a place for itself in the producing lists. Eastern Kentucky has shown the world that it is producing very high grade gas coal. The Kentucky coal fields are among the leaders. Much depends on whether the operators will sell coal on a fair margin and make money, or return to cut-throat tactics and lose what they have gained.

long period of freight congestion, which occasioned a number of troublesome embargoes, sometimes on one day and off the next, and again of several weeks' duration. Coal shipments consigned to Detroit and other points in Michigan, practically all of which must be handled through the Toledo gateway, blocked terminal tracks in Toledo, Cincinnati and other points south, apparently defying all efforts to get them to their destination.

ALLOW INDISCRIMINATE CONFISCATION

With Detroit steam plants and domestic consumers clamoring for fuel, which the coal trade in Detroit was unable to provide, the Railroad Administration injected new complications into the situation by authorizing practically an indiscriminate confiscation of coal on tracks for diversion to railroads and for the relief of towns and cities in the West that were facing a shortage in fuel supply. Some of the local dealers have not yet been able to learn the delivery point of part of their coal thus confiscated and diverted. Some of the dealers also had the novel experience of finally receiving consignments that had been diverted and sent back after having been hauled to remote points.

With embargoes in effect at the mines against loading cars for Detroit and Michigan, many Detroit factories were almost without coal during the early months of the year, while others were able to obtain temporary relief by clearing the retail dealers' yards of stocks that had accumulated there in 1918 during the operation of the zoning system. This, in effect was almost like the interposition of Providence for the retailers, who found themselves relieved of the product of Indiana and Illinois mines, which their customers rejected when coal of better quality from Ohio and West Virginia mines became available in 1919.

The deficiency in bituminous supply extended through the spring months, with brief intervals of temporary improvement, while the demand from steam plants and from domestic consumers continued pressing and almost constant. Little improvement in the transportation situation followed restoration of the railroads to private control, March 1, while the practice of confiscation was continued intermittently. Supplies of anthracite also were inadequate.

BUYERS BID UP PRICES

Some of the large steam coal users with reserve stocks depleted sent agents into the mining districts in the late spring and early summer in the effort to assure supplies of coal for the later months of the year. These agents, through their rivalry, in bidding against each other for such coal as was available, caused a material advance in prices. Efforts of local jobbers and wholesalers to maintain a more reasonable level were to a large extent thwarted by the continuance of car shortage as well as by the demand which arose for large shipments of bituminous to Tidewater markets for

Coal Prices in Detroit Now as Near Pre-War Level as Labor Costs Will Permit

Severe Weather, Unsettled Conditions, Government Regulation and Deficient Railroad Service Constitute Greater Obstacles to Business Success Than the War — Dealers Enabled to Get Rid of Product Consumers Had Rejected

BY E. E. DUNBAR

IN 1920 the coal trade in Detroit passed through a year of remarkable changes, a period so filled with uncertainties that it may well be said to have developed greater obstacles to successful continuance of business than any of the war years. As the year came in weather conditions were the severest in many years, characterized by almost continuous low temperatures, which made necessary plentiful supplies of coal for domestic consumers. With industrial plants and manufacturing establishments crowding productive capacity, there was an equally urgent demand for steam coal.

EFFECT OF STRIKE LONG-LASTING

Coal was available, however, only in limited supply. The strike which shut off production in the greater part of the bituminous coal fields late in 1919 made its influence felt long afterward

in 1920 in the way of diminished supply, as well as through the operation of the rejuvenated Federal Fuel Administration, which functioned part of the time through the Federal Railroad Administration.

To the trials and problems created by shortage of coal supply at the mines were added difficulties in getting coal from the mines to local terminal yards and team tracks. The severity of the weather and frequent heavy snowstorms contributed in producing troublesome handicaps for the transportation lines. The railroads, with motive power and rolling stock far short of normal supply and greatly impaired in efficiency during the long period of Federal management, were unable to overcome the obstacles encountered in their effort to handle an unusual volume of general freight.

In consequence, there developed a

the export trade and by the series of priority orders designed to supply the fuel requirements of New England and the Northwest.

Prices in the Detroit market consequently remained at a high level throughout the summer months, varying almost from day to day, while there was at the same time an inadequate supply of bituminous and anthracite. A further impediment to transportation developed with the strike of railroad switchmen. Manufacturing establishments and public-utility plants found it almost impossible to get sufficient coal to meet their needs, and because of this condition the Detroit Edison Co. found it necessary to impose drastic restrictions on the use of its current.

Through the Detroit Coal Exchange efforts to bring about a more liberal supply of coal for Detroit were made in July, including appeals to Governor A. E. Sleeper and members of Michigan's delegation in Congress, urging assistance. The Michigan Public Utilities Commission, after several general conferences in Lansing with representatives of public utilities companies in the state, undertook a survey to determine the quantity of coal that would be required for operation of these companies during the year. In August the Governor appointed a Michigan fuel committee to work for improvement of the state's coal supply, naming as its chairman W. K. Prudden of Lansing, who was State Fuel Administrator during the régime of Dr. Garfield.

Mr. Prudden, predicting improvement in the coal situation later in the year, recommended that coal buyers limit their early purchases to only part of the supply they would require for the winter. Even with the aid of considerable coal from Indiana and Illinois, Detroit dealers were heavily handicapped in the attempt to provide for their customers in the late summer and autumn months. With the support of a priority order from the Interstate Commerce Commission the Lake movement of coal was taking a considerable proportion of the supply and at the same time cutting down on the number of cars available for all-rail movement.

Toward the end of October, with the close of the navigation season approaching, jobbers and wholesalers began to observe an easing off of the buying demand from steam plants. With the lessening demand, coal became more plentiful and prices were shaded off. Through the succeeding weeks to the end of the year the demand for steam coal continued to shrink, while the unexpectedly warm temperatures of the last three months of the year produced a corresponding reduction in demand for domestic coal, with the result that the local market, which was so strong and active twelve months ago, was reduced to an almost comatose condition when the year passed out, while prices had declined to a point which the dealers say probably is as near the pre-war level as it will be possible for them to go in view of the increased labor costs of the mines.

New York Market in 1920 Suffered Acutely From Labor Unrest and Coal Shortage

Strike of Towboat Workers and Competitive Bids by New England and Canadian Buyers Intensified the Generally Disturbed Conditions—Increase in Freight Rates Boosted Prices Considerably

By R. W. MORRIS

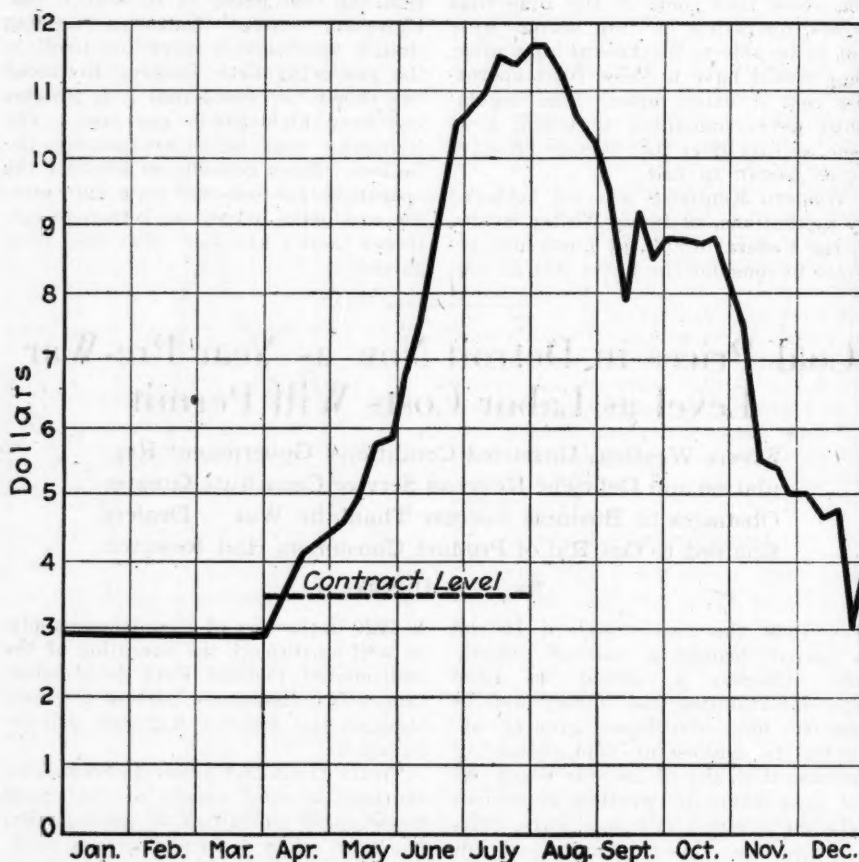
IN addition to being almost continually upset by the so-called "vacation" of the miners and the switchmen's and "outlaw" strikes of the railroad workers the New York market in 1920 had its towboat strike and a shortage of coal, to say nothing of contending with numerous investigations.

Anthracite

At no time in the entire year was there plenty of coal to meet the demands made upon the trade. At the end of 1919 domestic sizes were short, temperatures low and dealers as well as consumers were ready and willing to take all the coal they could get.

Conditions were becoming normal

slowly when in February the towboat workers demanded more pay and when refused their full demands quit work. The tying up of upward of five hundred tugs and barges did untold damage and was immediately followed by extremely low temperatures and storms. Coal was blocked in transit and dumpings at the piers were far below normal. The Bay and rivers soon filled with ice and it was difficult as well as dangerous to attempt to move the few boats available for carrying coal. Even after the ice had cleared out of the Bay it was difficult to move sufficient coal because of the scarcity of boats, the strike of the marine workers still being in force.



SPOT PRICES, BITUMINOUS MINE RUN, CLEARFIELD DISTRICT, PA., 1920

Diagram of spot prices in dollars per net ton, of mine run bituminous coal from the Clearfield district, Pennsylvania, in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Boston market. Majority of the tonnage involved moved all-rail.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak July 31. A sharp decline followed, which was checked in September by a firmer market lasting well into October, after which quotations dropped steadily until Dec. 23. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices.

No announcement was made in April regarding new mines prices but it was generally understood that there would be no reduction in view of the wage increases that were being negotiated.

The demand was strong and the supply short when, to cover wage increases, the companies in May advanced the price for the domestic coals an average of 85c. a ton with a proviso for monthly advances of 10c. per ton up to and including Sept. 1.

The Federal authorities took a hand in the situation in May because of the marine troubles, and there was a gradual improvement. All receipts were quickly absorbed. Demand for the domestic coals became easier but that for the smaller sizes increased, although warm weather was near at hand.

With the rail and towing conditions showing some improvement receipts were larger in June and shipments from the railroad docks were steadier. At about this time began the strike of 10,000 workers of the Pennsylvania Coal Co. Coal was being sent westward in large quantities so as to avert troubles in the winter months and complaint was made that the larger companies were not meeting the requirements of their customers. To add to the local troubles buyers from Canada, New England and other sections of the country began to invade the mining regions and to offer higher prices than those offered by competitors for the product of the smaller independent operators.

Increases in freight rates became effective early in September, resulting in a further increase for the f.o.b. prices for coal at the piers.

With the retail trade about 40 per cent behind in deliveries the miners took their "vacation" following the acceptance by President Wilson of the report of the Anthracite Wage Commission. Previous to the closing down of most of the mines hope had been held out that this market would receive its full quota of coal before winter arrived, but the action of the miners blasted these hopes.

The demand became so urgent in the autumn and early winter that some of the smaller independent operators, producing less than 1 per cent of the total output, took advantage of the situation and let their coals go to the highest bidders with the result that some of the tonnage was quoted as high as \$15 f.o.b. mines. These high prices led to one investigation after another and agitation on the part of the public, so that retail dealers hesitated considerably before making purchases which would in any way affect retail price schedules.

When the demand from the West, New England and Canada eased off and the larger companies were in a position to divert more of their tonnage to the New York market, the demand for independent coals fell off, and a lowering of quotations followed.

Weather conditions remained favorable throughout the late autumn and

early winter and there was a noticeable change for the better during the last two months of the year, so much so that in the holiday season it seemed that the crisis had been passed and that unless unforeseen circumstances arose the fear of a coal stringency had been passed. Quotations for independent coals were on the toboggan and in some circles it was predicted that by the middle of February these coals would be selling at or below the larger companies' schedule.

Bituminous

Those of the trade who dived in the export branch of the industry saw much of the trade go to smash with the drop in freight rates and the ability of the English miners to place their product in the hands of foreign consumers at lower prices than the American coal man could. Much of this phase of the situation could have been avoided, in the opinion of some of the trade, if care had been taken to see that the foreign trade was supplied with the best grades of coal.

Snowstorms, frozen coal and a boatmen's strike were part of the causes of trouble in January. Feb. 1 found receipts increasing, but the heavy storms and the strike of the boatmen interfered with deliveries and embargoes were placed on the piers to prevent further congestion.

The making of contracts was resumed in March and April and many ranging

in price from \$3.50 to \$4.50 were made. There was a tendency to higher prices during the early summer, partly due to the wage increase given the workers by the Bituminous Wage Commission. The situation was considerably disturbed by the switchmen's strike in April. Contract holders continued to take their entire quota if they could get it and spot coal was scarce.

The marine strike was still in force and towing charges in some cases rose above \$1 a ton. This condition of lack of supply and delay in deliveries because of the switchmen's and tow-boat men's strike continued for several weeks, with spot quotations increasing.

Many manufacturers and other large consumers who had been gradually filling their bins during the summer with high-priced coals dropped out of the buyers' market early in August. This tended to increase the tonnage of free coal and resulted in further lowering of quotations. The market showed further softening in September and quotations for the various pools varied as much as \$1 per ton. Receipts steadily increased and New England buying fell off.

The local market did not show much activity the last quarter of the year. Prices softened and demand became easier. The feature of the market in November and December was the slump. Quotations dropped rapidly and cancellations of orders were frequent.

Industries of Northern Ohio Threatened by Inability to Obtain Coal in 1920

Abnormal Conditions Aggravated by Restriction and Transportation Difficulties—This Section Suffered Greatly Because of Priority Orders to Help the Northwest—Increased Business Confidently Expected

BY JOHN W. HILL
Lakewood, Ohio

ALTHOUGH located within easy access of the coal mines of eastern and southern Ohio, the great industries which are the foundations of northern Ohio's prosperity during a greater part of the year were hard pressed to obtain enough fuel to keep in operation. Under various priority orders coal was diverted to other sections or to preferred customers, with the result that many operations were curtailed or even suspended. Attempts were made in some instances to evade oppressive regulations. Heavy premiums were offered for spot deliveries and automobile trucks were employed for obtaining fuel to an extent never before believed possible.

The last month or two of 1920, in contrast with the hectic conditions prevailing during the greater part of the year, ushered in a period of dullness, with supplies increasing faster than the

demand, due largely to decreased industrial activities and to continued mild weather.

The year 1920 opened favorably, with increasing quantities of coal arriving in Cleveland and vicinity, the demand, however, exceeding the supply because of a low rate of production at the mines and a shortage of coal cars. Prices on anthracite grades ranged from \$11.75 to \$12.70 a ton; on domestic bituminous, from \$7.20 to \$8.30 a ton for West Virginia splint, No. 8 Pittsburgh and Massillon lump; on Pocahontas shoveled lump, \$8.95 to \$9.55; and on steam coal \$5.10 to \$5.50 for slack and \$5.25 to \$6 for mine run.

The Cuyahoga County Fair Price Committee about the middle of January permitted an increase of 50c. a ton in retail prices to cover additional labor and delivery costs. Receipts at this time were not more than 50 per cent of

normal and by Feb. 1 had dropped to one-third of normal. Domestic orders were taken subject to indefinite delivery, and closing of schools and factories was threatened. Toward the end of the month many industrial plants were operating on a day-to-day basis. Conditions were complicated by an epidemic of influenza, which further reduced the labor supply.

Some shutdowns and curtailment of operations through the adoption of shorter work days and shorter weeks were reported during March and a number of schools were forced to close for a short time, but by the end of the month it was estimated that 60 per cent of the demand was being met. Receipts early in April increased to 70 per cent of normal and stock piles began to rear their heads. Mine operations also began to improve.

DIFFICULTIES NOT AT AN END

The perplexities of the coal men, however, were not ended. The switchmen's strike, beginning early in April and continuing all through the summer, further added to transportation difficulties, already serious because of a shortage of coal cars. Industrial plants, particularly the iron and steel mills and foundries of this district, were unable to obtain enough coal to insure steady operation, although the plight of the domestic consumer was alleviated for the most part by the coming of warmer weather.

Coal shipments on the Great Lakes started about a month late and for

April were only 307,000 tons as compared with 1,082,183 tons during the same month of the previous year. Lake shipments continued below normal for May and the first part of June, and as the season advanced it was feared that the Northwest would not receive sufficient fuel to carry it through the winter.

This situation led to the Interstate Commerce Commission's famous Service Order No. 10, issued through H. M. Griggs, manager of the Cleveland Ore & Coal Exchange, effective June 13, whereby operators were required to send to Lake ports priority quotas ranging from 35 to 60 per cent of the capacity rating of individual mines. The Interstate Commerce Commission in September, answering the pleas of consumers facing an acute shortage of fuel, permitted an additional allowance of 800 cars of coal a week for use in the state in order to avert threatened shutdowns.

Cargo freights on Lake shipments at the beginning of the season were advanced somewhat over those of 1919, one big Cleveland vessel interest contracting to take 1,000,000 tons of No. 8 Pittsburgh to the head of Lake Superior at 50c a ton. The rate to Milwaukee and Lake Michigan ports was set at 60c a ton. The previous season's rates were respectively 42½c. and 47½c. a ton, while those for 1918 were 48c. and 55c. respectively. Boats loaded late in November received \$1 a ton, while a few loaded in December obtained \$1.50 a ton.

would become more plentiful and

Influenced by the belief that coal cheaper with the closing of Lake navigation, which was expected to release large quantities of coal for local use, domestic consumers for the most part remained out of the market during the summer and early autumn. At the beginning of August it was estimated that not more than 2 per cent of the domestic users in Ohio had obtained their winter supply of coal as compared with 40 per cent in 1919.

Bids opened in August for supplying Cleveland schools ranged from \$7.25 to \$9.50 a ton for slack and as high as \$10 for lump coal. No bids over \$7.65 for slack and \$8 for lump were accepted.

ANTHRACITE JUMPS \$1-\$2 A TON

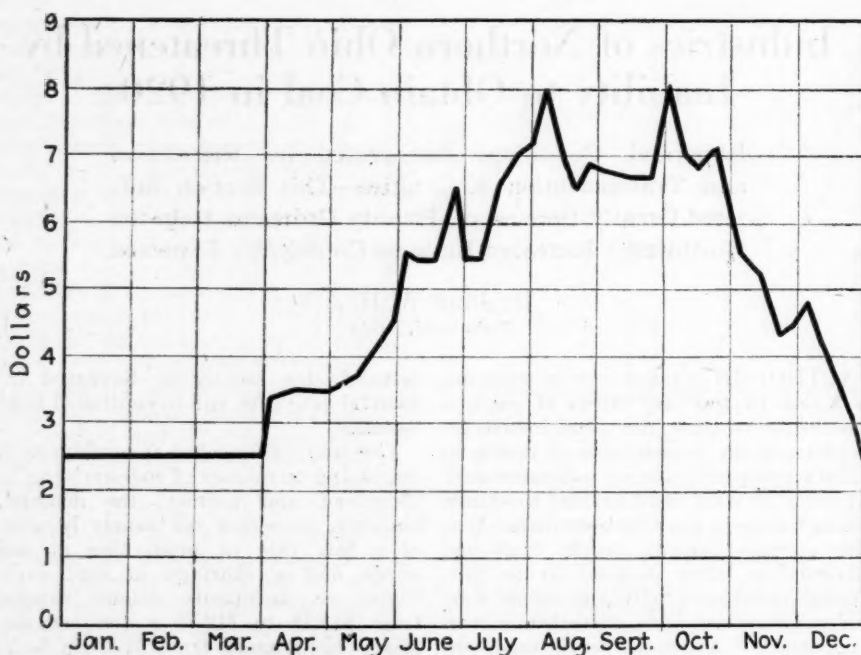
Increased freight rates effective Aug. 26 added from 40c. to \$1.50 a ton to bituminous prices then in effect, the range at that time being from \$11.80 to \$12 for Massillon lump and No. 8 Pittsburgh. Prices on anthracite grades, then ranging from \$14.50 to \$15.50 a ton, and on Pocahontas ranging from \$12.50 to \$15, were advanced \$1 to \$2 a ton. Some dealers in anthracite and Pocahontas were four to six months behind on deliveries at the time that the new freight rates went into effect.

For a short time after the closing of the Lake navigation season coal continued scarce and prices remained high, due chiefly to an unexpected and more acute car shortage. However, production at eastern Ohio mines steadily increased, and as the car supply improved the demand also fell off, with industrial curtailment spreading rapidly. By the end of November dealers were receiving all of the coal they could handle and prices at the same time began to soften.

Steam coal, which a few weeks previously had held firmly at around \$8 a ton, fell to \$3.50 and \$5 a ton. Hard coal and Pocahontas also declined 50c. to \$1 a ton, although the supply was reported 50 per cent under the demand. Coal continued to come forward on contracts well into December, although many buyers withdrew from the market to await lower prices. Toward the end of the year cancellations of contracts appeared in great numbers.

OPERATORS AND DEALERS OPTIMISTIC

The year 1920 closed with general dullness prevailing throughout the coal trade in Ohio. However, with an increase in industrial activities probable during the early part of 1921, coal operators and dealers regard the outlook cheerfully and feel that the coming year, whatever it may hold in store, cannot but be more satisfactory than the one just passed. Not all authorities are agreed that immediate prospects for prosperous trade conditions are directly ahead, but indications generally seem to point to a good volume of business for 1921, perhaps with the margin of profits smaller, but with risks of doing business less.



SPOT PRICES, MINE RUN, HOCKING FIELD, OHIO, 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Hocking field of Ohio in 1920. Quotations taken from Columbus market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak early in August. After a decline this figure was again reached in October, following which came a steady descent throughout the balance of the year. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

Sale of Large Coal Properties Foreshadows Expansion in Northern West Virginia

Output of 15,000,000 Tons in 1920 Likely To Be Surpassed During the Coming Year—Bethlehem Steel Co. and Coal Land Development Co. Acquire Large Holdings—New Rail Lines Will Increase Production—Labor Situation Tranquil

BY H. A. WILLIAMSON
Fairmont, W. Va.

NORTHERN West Virginia probably produced more coal during the last year than ever before. The total output, as near as can be estimated at this time, will run between fourteen and fifteen million tons. The car situation improved steadily and this with other features permitted an increased tonnage to be produced. Of course the car shortage is still the controlling feature of shipments and probably will remain such for some years. Undoubtedly if it were not for this the price of coal would have dropped below its lowest point for the year. As it was the price dropped to a point where the snowbird, or wagon-loading, mine has about gone out of business and at the time of this writing (early in December) there is practically no coal being loaded by these operations.

SUPPLY OF NATURAL GAS WANES

Coke is being produced in limited quantities and will continue so just as long as prices hold. As has been previously stated, there is no inducement to produce coke in this region unless the price is above that ordinarily obtained. The byproduct ovens just being put in blast at Fairmont will produce some coke—probably four hundred tons per day—but it is more than likely that this is all placed within the interests which control the corporation owning them and little or none of it will be on the market save locally for domestic use. As the natural gas supply is rapidly reaching the vanishing point, there eventually will be a large local demand for domestic coke, if properly worked up.

Predictions of falling prices and coming difficulties began to be heard early in the year and continued in constantly increasing volume up to its close. In spite of these there has been an undercurrent of confidence which at this time appears to have been justified. Almost everyone talked of retrenchment and strict economy yet the year recorded more extensive coal land purchases and the inception of more new operations than any preceding year in the history of the region. Some thirty or forty new charters have been issued by the state with stock issues ranging from \$5,000 to \$500,000 or more.

The largest transaction appears to have been the purchase by the Bethlehem Steel interests of the property of the Elkins Coal & Coke Co. and a part of the property of the Jamison Coal & Coke Co. The Elkins property is located in Monongalia and Preston Counties and is said to consist of 445,

000 acres of coal, the recorded purchase price being \$5,000,000. There are seven operating mines, six in the Upper Freeport Seam and one in the Pittsburg Seam. The Jamison property purchased consists of Jamison Mine No. 7 and Jamison Mine No. 10, both shaft operations in the Pittsburg Seam near Fairmont, W. Va.

The Coal Land Development Co., of Clarksburg, W. Va., is reported to have acquired an area approximating sixteen square miles of Redstone coal and several companies are reported to have purchased areas of Pittsburg coal to the southwest of Clarksburg. These latter are partly within territory which has previously been mentioned as having the mining problem complicated by a large number of oil and gas wells; therefore development will be watched with keen interest.

A large area of virgin territory is being opened by branches of the Monongahela R.R. and the Morgantown & Wheeling R.R. The territory being opened by these roads lies north of Fairmont and west of Morgantown. Approximately it extends from the line of the B. & O. R.R. between Fairmont and Wheeling on the south northward across the Pennsylvania State line, and from the Monongahela River on the east to the Ohio River on the west.

RAILROADS INCREASE MILEAGE

The railroads started construction on the eastern end, near Morgantown, the Monongahela Railroad extending branches westward from its main line, while the Morgantown & Wheeling has constructed and is operating twenty-three miles of its main line from Morgantown westward to Blacksville. On the eastern end of this area the Pittsburgh and Sewickley seams of coal are exposed to advantageous mining. The greater part of the Pittsburgh Seam is controlled by large holding companies and not much of it has been opened for operation. The Sewickley Seam, on the other hand, was not generally considered in years past, consequently it has been open to purchase and many small holdings have been taken up. Mines in this seam are being opened as rapidly as the railheads advance and there are now thirty or forty Sewickley mines operating within a very short distance of Morgantown.

Farther west the Waynesburg Seam is exposed, but so far the tracks have not generally reached this exposure and but one or two mines are operating in the Waynesburg. Purchases of areas of this seam have been made, however, and no doubt it will be opened

as soon as it is possible to do so. When the Morgantown & Wheeling R.R. is completed the mines located on it will have a new and direct connection through Wheeling with the Lakes and they will have a certain advantage in obtaining this important business.

In February the Baltimore & Ohio R.R. purchased the Morgantown & Kingwood R.R., a line running through coal territory. This road is about forty-five miles long and has been in operation for a number of years. Both its terminals connect with the B. & O. R.R., the one at Morgantown connecting with the Fairmont-Pittsburgh line and the other at what is known as M. & K. junction on the B. & O. main line east of Grafton, W. Va. As a result of the purchase of the Elkins mines on the Morgantown & Kingwood R.R. by the Bethlehem interests, it is generally supposed that the B. & O. will substantially improve this road, which gives it an outlet for coal from the Morgantown district across to the main line without putting it through the more or less congested Fairmont-Grafton yard section.

SHIPMENTS TO LAKES BELOW NORMAL

In the past the Northwestern trade, via the Great Lakes, was considered one of the standbys of the region and every endeavor was made to give this trade preference and take care of it, but the Lake trade suffered severely this year. Early in the year certain figures were given out as to about what should be consigned to Lake ports, but at the end of the year actual figures show that only about 35 per cent of this estimate had been shipped. The total coal sent to Lake ports from the region amounted to only 50 per cent of last year's shipments, and 1919 was a bad year for the Lake trade. The northwestern part of the United States and Canada normally draw a large part of their coal supply from this region, but it is understood that they will not suffer for want of coal this winter, because the companies controlling this business picked up other coal to take care of it and the upper Lake docks are amply supplied with coal—some perhaps of inferior quality but still sufficient to take care of the needs of the consumers for the winter.

While it is not admitted, and possibly not actually realized by the operators and railroads, one factor which has diverted coal from the Lake trade developed from petty inconveniences caused by various orders and regulations of the railroads. Probably the chief reason why the Lake trade has suffered, however, lies in the possibilities of better price in certain foreign trade. Much talk has been heard all over the country about our lack of interest in foreign trade and its possible loss from neglect. Certainly none of this criticism applies to the coal operators in that part of northern West Virginia termed the "Fairmont region."

So far as it has been possible to get railroad cars and boats for the business, coal has been going out of the region in a steady stream for the foreign

trade, particularly for South American and Mediterranean ports. It is not possible to secure figures on this business at this time. Shippers are not inclined to divulge much information on their foreign business and the further disturbing factors of confiscation and diversion of coal en route make it impossible to get any reasonably approximate idea of the volume of this business without careful and detailed investigation. There is no doubt, however, but that such business could be enormously increased were proper shipping facilities—railroad cars and vessels—available.

The byproduct plant of the Domestic Coke Corporation at Fairmont which has been in course of erection for several years was practically completed and ready for operation in August. The plant consists of sixty ovens (charging about twelve tons per oven) with other equipment and ground space for additional ovens. A peculiar feature, emphasizing the inadequate railroad equipment, developed when this plant was about ready to operate. The byproduct people had made a contract for coal from a near-by mine and in August called on the operator to begin delivery. The operator replied that he was entirely unable to make deliveries of coal to the byproduct plant unless the byproduct company could furnish its own railroad cars. The coal company explained that because of lack of cars it was unable to fill its contracts. Of more than 7,000 cars sent out by this company in August more than 5,000 were assigned—that is, went either for railroad fuel or to some public utility. The byproduct company could not work except with a constant fixed coal supply and it was not until Dec. 1 that it was able to fire its ovens, at which time one of the railroad companies had placed in its service some forty crippled cars not fit for other than local service.

With the exception of one or two minor local flare-ups, the labor situation has been quite tranquil. When the union organization was introduced in the region considerable fear was expressed as to unsatisfactory results. So far this has not developed although there still exists a feeling of uneasiness in certain sections. There are certain elements in the region that tend to minimize labor troubles. A large proportion of the population is native and another large part, while foreign born, has been in the region for many years, and these have taken advantage of the excellent school system provided and they are more inclined to investigate and reason out their problems and reach a settlement without loss of time and money by striking. In fact, while these people show a decided inclination to hold out for what they consider their proper recognition they also show very little patience with any radical element, and the preaching of extreme doctrines is decidedly unpopular.

As a whole housing and living conditions are better than in most regions and are steadily improving; safety and welfare work are receiving considerable attention and the bond between employee and employer is constantly being made stronger. So far as can be observed more and better precautions are being constantly taken to prevent accidents and the year has been marked by great improvement along this line. While there was some loss of life during the year, it seems likely that when the record is finally made up it will be better than that of any preceding year. The same is true of fire losses—there were a few serious fires but the final record will show great improvement over the records of the past. Taken as a whole, when compared with other coal regions the record of northern West Virginia for 1920 has been particularly quiet, successful and satisfactory.

at the advanced prices when they had contracts unfilled. The situation, as usual, has brought up the question of the force of a sales agreement. Should it be regarded as fast and binding or as sufficiently flexible to be looked on as more of an option than otherwise? The later reversal of conditions, with more coal offering than could be sold, emphasizes the argument of those who do not consider a contract of force in extreme situations, if only from a matter of necessity, which it is said knows no law.

CONDITIONS THAT KEPT PRICES UP

A steady increase in the cost of coal, both bituminous and anthracite, wages going up from time to time and a large increase in freight rates also, made it impossible to return to former prices in either case, so that anthracite, after the last freight advance retailed in Buffalo at \$13.25 for stove and chestnut and \$13 for larger sizes and continued to do so to the end of the year. The prospect is that anthracite will be high in future in spite of conditions that reduce the price of bituminous, for it is no longer plentiful and so cannot be produced much in excess of consumption.

It is held as a law of the bituminous trade in the Buffalo market that a car shortage is always needed to make bituminous coal pay a profit. The price of bituminous ran up after government control ceased on April 1, till it was selling as high as \$10.50 at the mines early in September, though at the same time it should be said that the top price was obtained only in comparatively few instances, most of the coal going at prices running down to the lowest contract figures. When the decline set in it continued without check, till at the end of the year prices were seldom more than \$4 net at mine, with considerable coal going for even less than that, as consumers were pretty well supplied and were not using nearly as much coal as during the peak period of prices. The bottom is now generally supposed to have been reached.

SHIPPERS ACCEPT 50C. MARGIN

As a rule Buffalo shippers did not try to obtain top prices, but they did try to settle down to a margin of 50c. a ton for services rendered. As the change in prices went on it was found that the position of the jobber was completely reversed. With high prices his business was to serve the consumer and obtain coal enough to enable him to carry on his business, but when the decline set in he was gradually turned over to the operator, who soon began to prod him to find a market for the coal. The year ended with much more coal produced than the consumer wants and a prospect of mine closing or drastic reduction of mine wages to meet the conditions. The chief uncertainty is due to lack of knowledge as to the probable duration of the present period of slow business and there is need of proceeding with extreme caution till the return of business activity. Employers

Buffalo Coal Market in 1920 Experienced an Unsatisfactory Year

Series of Changes Had a Distressing Effect—
Unsettled Conditions Brought Up Usual Question
on the Binding Force of Contracts—As a Rule
Shippers Refrained from Demanding Top Prices

BY JOHN W. CHAMBERLAIN
Buffalo, N. Y.

THE year in coal at Buffalo was quite as unsatisfactory as elsewhere. The market is for the most part a jobbing one, though there are half a score of mine-owning companies, one or two of them having an annual production of more than a million tons. Therefore the selling of coal has seen a series of changes that were especially distressing. The jobber united with the operator in the spring to establish a year's trade by making the usual April contracts for bituminous. Up to that time prices had been regulated by the

government and were sufficiently low for contracts to be freely made at less than \$4 a net ton at the mines, some of them running as low as \$3.40. As the season advanced it was found impossible to meet these obligations because both labor and cars were inadequate to produce and move the coal sold.

Prices on that account ran up rapidly, but in practically every case the shipper, whether operator or jobber, tried to fulfill contracts and some of them were able to say at the end of the season that they did not sell coal

see in this an opportunity to force wages down.

During the year freight rates advanced from \$2 to \$3.24 on anthracite and on Pittsburgh bituminous from \$1.75 to \$2.51, with Allegheny Valley remaining 15c. lower than Pittsburgh rates. The freight on Connellsville coke advanced from \$2.60 to \$3.64. This is not an active coke market, for the reason that most of the larger furnaces buy their supply direct from the ovens, but during the period of shortage contracts were not filled promptly and jobbers were called on to furnish coke wherever possible. Coke prices ran up to about \$18 a ton at the peak season, but again dropped to \$7.50 for best foundry before the end of the year. Buffalo is a heavy consumer of coke. During the season of 1920 it passed all the Ohio ports but one in iron ore receipts by Lake. Jobbers now quote mine prices and have dropped delivery quotations on coal or coke.

The anthracite trade has been very unsatisfactory, though the end of the year again saw production gaining on that of the previous year. Buffalo has suffered severely by the decline in natural-gas fuel, which at one time dis-

placed fully 600,000 tons of anthracite. When anthracite was called on this year to make up the shortage it did not do so promptly. The close of the Lake trade, which had moved 3,584,386 net tons to the upper lakes, as against 4,556,118 tons in 1919, found shippers unable to turn the flow of coal into the city trestles, as had formerly been done, and the shortage still exists, although not in a serious degree. Independent anthracite ran up as high as \$17 at the mines during the worst of the shortage, compared with \$8.50 company circular, but is now down to a premium of \$2 or \$3.

The establishment of the Wabash Fuel Co. at the opening of the year by George J. Mechau was followed by the organization of the Sinclair Coal Co., with Henry S. Hill, president, which is the only new mine-owning company. Agencies of the P. O. McIntire Coal Co., of Cleveland, with M. G. Siener, manager; the Premier Coal Co., a New York corporation, with H. Snyder, manager, and the Weston Dodson Coal Co., were established in Buffalo late in the year. The latest local corporation is the Maxim Coal & Coke Corporation, of which L. P. Zimmermann is president.

It is interesting to note that on Vancouver Island the Canadian Collieries, Ltd., has conclusively demonstrated its ascendancy with an estimated total of 746,000 tons. The nearest to this production is that of the Canadian Western Fuel Co., Ltd., the long-established colliery of Nanaimo, B. C., with about 459,000 tons. The Cassidy Collieries of the Granby Company was in its infancy in 1919 and it is only necessary to state that its product for 1920 will aggregate something like 210,000 tons to indicate that it has grown into a business of importance in the course of the last twelve months. The Pacific Coast Coal Mines, Ltd., with 99,800 tons, also has commenced to climb, while the Nanoose-Wellington Collieries, Ltd., Nanoose Bay, has done well with approximately 45,000 tons to its credit.

INSTALLING NEW EQUIPMENT

In the Nicola-Princeton district the chief producer is the Middlesboro Collieries with a total of about 95,000 tons. Other producers are the Fleming Coal Co., with 30,000 tons; the Princeton Coal & Land Co., with 19,000 tons, and the Coalmont Coal Co., with 7,584 tons. The latter company was reorganized recently and is developing its holdings so that it may be expected to take a more important part from this date forth. Several million tons of coal are being developed, an aerial tramway is being installed between the mine and Coalmont on the Kettle Valley Ry., a screening plant is being installed and a tippie constructed at the railway.

The Chu Chua Coal Mining Syndicate is opening up a new field situated on the Indian reserve a short distance south of Chu Chua station and not far from the City of Kamloops. The coal is of excellent quality and, although the seam now under development is only about three feet in width, it is expected to improve as the work continues. The Kamloops Natural Gas, Oil & Coal Co., Ltd., also is drilling in the coal measure of Coal Hill, a short distance from Kamloops.

PRODUCTION SOON FROM NEW SEAM

The Telkwa Collieries, located near the Grand Trunk Pacific Ry. in northern British Columbia, has not done much this year, its production, as far as can be judged, being about 1,300 tons. A short distance from this property a new seam is being opened up which contains high-grade coal, some of which soon will be marketed. It seems probable that the immediate future will see extended development of the coal areas of this district.

The ever-increasing price of fuel oil and its scarcity in the world's markets is causing renewed interest in all the promising coal fields of the North. The Telkwa, Morice River, Peace River and Groundhog fields have attracted interest during the last year and large scale development may be expected before long. Undoubtedly these areas contain large quantities of good grade coal and but for transportation difficulties they now would be in the productive class.

British Columbia's Output Expands; Plans Continued Development of Resources

Increase in Total Production of Coal During 1920 Conservatively Estimated at More Than 518,000 Net Tons—Gain in Crow's Nest Pass District Exceeds 50 Per Cent—Dominion Government Still Exercises Authority to Preserve Industrial Peace

BY ROBERT DUNN
Victoria, B. C.

AN increase in coal production will be shown by the collieries of all the coal fields of British Columbia for 1920 in comparison with the previous year. A conservative estimate places the output at 2,787,000 net tons, the figures for 1919 being 2,267,541 tons, a gain of more than 518,000 tons.

On Vancouver Island there has been a notable advance. The big producers, the Canadian Western Fuel Co. and the Canadian Collieries Ltd., have more than maintained the pace set in 1919. While the Island Field has lost the Jingle Pot mine, which ceased operation early in the year, the adverse effect of this has been fully compensated for by the speeding up of the regular producers and by the marked development of the production of the Granby Mining & Smelting Co.'s collieries at Cassidy. The output of the island aggregated approximately 1,783,800 tons as compared with about 1,700,000 tons in 1919.

CROW'S NEST PASS GROWS RAPIDLY

There also has been an improvement in the Nicola-Princeton field, where production during 1920 is estimated to total 151,584 tons as compared with 150,705 tons in the previous year.

The outstanding advance, however, is in the Crow's Nest Pass District of

eastern British Columbia. The aggregate for 1920 is placed at 852,000 tons in round figures as compared with 562,000 tons in 1919. The explanation, of course, is that in 1919 there was a three-month strike at Fernie, materially reducing the output of the Crow's Nest Pass Coal Co.

There also were disputes in 1920, however; in fact for some months there was more or less open warfare between the two labor organizations, the United Mine Workers of America and the so-called One Big Union. In this section the authority of the Dominion Government, exercised for the purpose of preserving industrial peace in order that production might be maintained during and immediately after the war, still exists. W. H. Armstrong, as Director of Coal Operations, still is in control and it has been possible, by virtue of the mediatory service of his department, to keep the mines on a producing basis throughout the year. This, therefore, accounts for the fact that the mines of Coal Creek and Michel had an output for 1920 of about 686,000 tons as against 480,000 tons during the preceding year, while the Corbin Coal & Coke Co.'s production amounted to something like 166,000 tons as against 82,000 tons in 1919.

Last Year Was the Worst in History of Coal Industry in the Northwest

Transportation Difficulties the Root of the Trouble—Judge McGee Gives "Hang-the-Expense" Advice and Too Late Yells "Robbery"—Mild Weather Helps Demand Keep Pace with Supply

BY G. A. WELCH
Minneapolis, Minn.

A REVIEW of the Northwestern coal situation for the past twelve months is considerably like those surgical operations which are entirely successful in every way, except that the patient lacks sufficient resistance and dies. The coal business had been most unsatisfactory all though the war but 1920 probably was the worst year for the coal trade in the Northwest to endure. There was not a time during the year when things were anywhere near normal.

The year opened with endless difficulties in transportation—the root of all our trouble. Stocks of coal on the docks at the beginning of the year were limited, but they proved sufficient to meet requirements. When it comes to estimating the future needs of the Northwest, there must always be allowed a certain leeway, as it is impossible to anticipate precisely either domestic or industrial needs. A mild winter like the present one will cut down domestic consumption materially. Industrial slackness will do the same on steam coal. Hence when estimates of the needs of the Northwest are made, they can never be close, for a variation may follow in either direction.

The delivery of steam coal from the all-rail territory of Illinois and Indiana was intensely handicapped in 1920 by lack of cars, and public service corporations were greatly disturbed by the short supply, which threatened to leave them without sufficient coal for current needs.

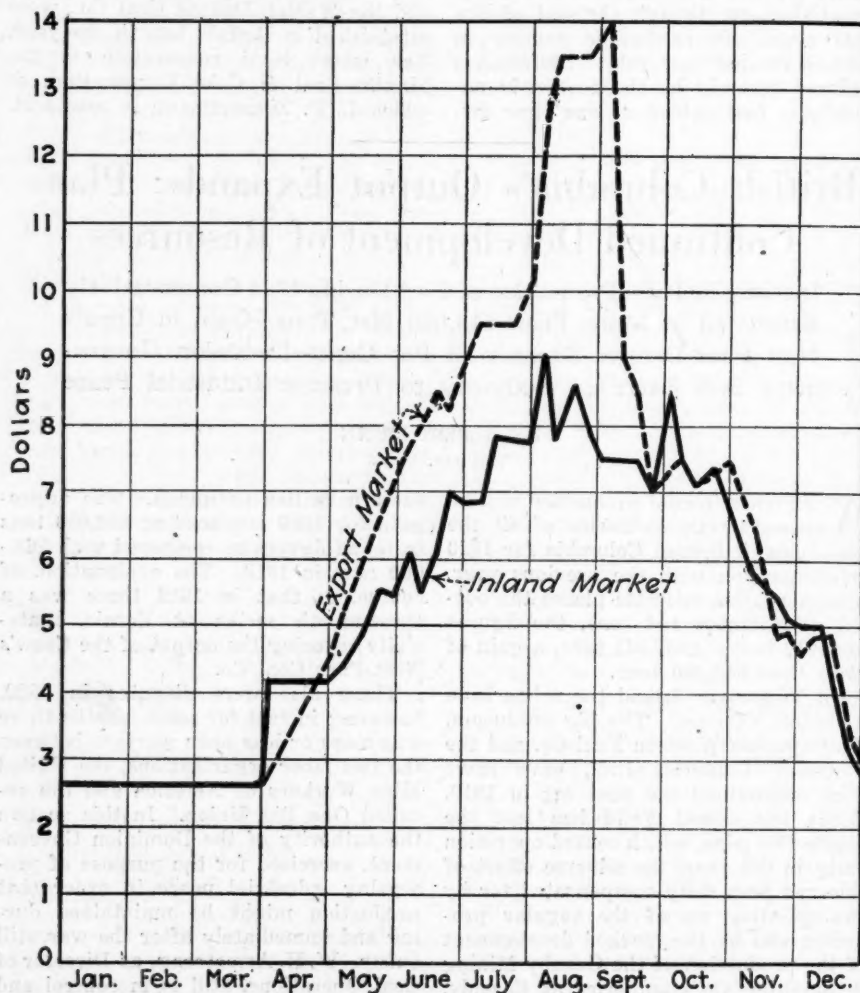
However, the spring was reached with only a continuation of the uncertainties which had held over from the preceding season. Before cold weather was over, the coal trade in the Northwest concluded that the possibility was slim for getting adequate fuel forward to the docks at Duluth, Superior, Ashland and Washburn for the Northwestern States. In order to avoid a repetition of former difficulties, steps were taken early in the season—in March—to estimate the needs of the docks for the 1920-21 winter. So far as the dock trade was concerned, it did all that it could do to get up sufficient coal before the pressure of needs from other directions would cut down the free movement. But working out approximate needs and placing the orders did not complete the delivery. The car shortage was still on hand and working overtime—the only thing in railroad operation during the summer which seemed to be functioning.

Although the Lakes opened for navigation somewhat earlier than usual, little coal was sent forward to the

lower Lake docks. May slipped by and June arrived, and still there was no improvement. It is difficult to place the responsibility for the situation, as each faction blamed another for the delay. Looking backward, it seems that more could have been done in the early summer to get coal forward. It is true that there was a coal strike, under the euphemism of a "suspension," and it was very natural for the operators to seek to let things run as slowly as possible while wearing out the situation to a conclusion. But after all allowances are made, it still appears that

the Northwest might have had more attention early, and thus have been spared much of the trouble that came later, to the discomfiture of other sections.

It is one of the advantages of the Northwest that from the dock standpoint it is almost unique in the coal business—one of the few sections where the trade stores coal in the summer for use in the winter. This has been most advantageous heretofore, giving an outlet for summer production which would otherwise have to be reduced. Because of this system, producers in the East have built up a business which they should maintain as a moral responsibility. In the face of the obligation thus assumed, those operators defaulted lamentably during the summer of 1920. When midsummer was past and there was not a third of the usual stock on the docks, Governor Burnquist of Minnesota sent Judge McGee as fuel commissioner to the lower Lake ports to expedite coal movement.



SPOT PRICES, MINE RUN, KANAWHA DISTRICT, W. VA., 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Kanawha, W. Va. district in 1920. Quotations taken from Columbus and export markets. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In August increases in wages of day labor resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Prices for export are shown separately from the inland market. A wide differential is indicated for a part of the year, when demands from both sources were heaviest. This margin vanished in September and the decline in both markets was steady throughout the balance of the year. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

This step was taken in July. Shortly after, due to the efforts of W. H. Groverman, secretary of the Northwestern Coal Dock Operators' Association, Judge McGee and others, a priority order was issued by the Interstate Commerce Commission, effective from July 26, to assure sufficient cars to move from the mines the coal so greatly needed for the Northwest. The commission seems to have operated as does the ostrich which deposits its egg in the sand and leaves all further development to chance and nature. The order did not produce the cars, and the Northwest did not get its coal. The advance in freight rates followed in due time, resulting in an advance of from \$2 to \$4 a ton on coal, while the open market, which was the only place that soft coal could readily be obtained, went kiting.

The dock trade was drawn between two dilemmas. The cost of soft coal for domestic and steam use reached a point which would not willingly be paid, yet it was almost certain that unless the dock companies did put in coal at whatever price they had to pay in order to get it, there would be a serious situation in the Northwest during the winter. They could not get their supplies through the usual sources and at the prices available at the time they ordered in the spring. The pressure from other markets forced the spot market up and the Northwest had to meet it or go without. Almost no support came from the dealer trade. The latter admitted the seriousness of the situation, but also practiced the first law of nature, which is safety first.

The priority order, while not successful, did help, and coal deliveries to the docks picked up during the autumn, though far from the probable needs. All this time all-rail deliveries were restricted to less than the normal delivery for slack time. Nothing could be approximated as to what the rail fields could be depended upon to do. So serious was the outlook in the autumn that about Nov. 1 Judge McGee wired to Minneapolis business men urging that dealers and consumers buy coal at whatever price it could be obtained, to keep from "freezing to death." These are the prices which only a month later, in his letter to the Calder committee of the United States Senate, the judge characterized as rank robbery and genuine extortion. The figures seem to justify the statement, but the fact arouses wonder why they were not denounced when they were made, in an effort to break up the combination instead of conniving with it until the mischief had been done.

By means of constant pounding and pushing and the extension of navigation beyond the usual date, deliveries of coal to the docks finally were brought up to last season's totals. The situation has been greatly aided by the very mild autumn, which resulted in a lower rate of consumption of domestic coal, while a lessening of industrial activity did the same for steam coal. This decrease in requirements is expected to

be sufficient to offset the difference in stocks. At the beginning of 1919 there was a total carry-over of more than 3,000,000 tons of hard and soft coal, but there was almost none at the beginning of 1920.

Early in December it became apparent that the need of coal was not going to be up to expectations. Instead of a famine market and buyers imploring the trade to sell regardless of price, the other extreme was experienced—a weather market, with ample supplies and consumers not at all alarmed over getting coal, but very much inclined to scrutinize the prices asked. The Illinois market had become a factor in the Twin Cities and the territory south and west, and the car situation had cleared up immensely. It was no longer necessary to kidnap a car and bribe a train crew to get a car of coal. The Illinois market sagged, weakened, slipped and then went headlong. Screenings, which had been worth more than mine run, could not be given away. This applies mainly to

the lower grades of Illinois coal, which were promptly neglected as soon as the market became free and buyers could select what they wanted instead of taking anything they could get. But mine run soon followed suit, with a decline of from \$1 to \$3, and only the best grades of prepared sizes were able to maintain a semblance of their former list price. Extreme top prices on dock coal also succumbed, although lists did not appreciably change.

All things have an end, and the exceptionally mild weather finally succumbed to a little real winter—sufficient to give a little brace to a sadly demoralized market and restore the idea that there might be winter in December and January. At the same time the uproar created by the Calder committee announcements tended to unsettle the public and to create the hope that there will be a revision of coal costs. So far as the Northwest is concerned, the revision must be at the mine, for there is very little leeway at this end to allow for shrinkage.

Ohio Coal Trade in 1920 Enjoyed Greatest Prosperity in Its History

High Prices Brought Success to Producers, Wholesalers and Retailers—Production 11,000,000 Tons More Than in 1919—With Adequate Car Supply Output Would Have Been 20 per Cent Greater

BY J. W. LEHMAN

Columbus, Ohio

FROM almost every standpoint the year 1920 was the best in the history of the Ohio coal trade. Big production with extra high prices brought unusual prosperity to every branch of the industry, including producer, wholesaler and retailer. The lake trade was generally active and a fair tonnage was shipped to the Northwest during the unusually long lake season.

It was only toward the last of the

1919, being exceeded only by 1918. Total production in 1920 is estimated at 45,000,000 net tons.

Figures compiled by the Southern Ohio Coal Exchange show that for the nine months ending Sept. 30, 1920, the total shipments of revenue tonnage were 26,738,439 tons, to which should be added approximately 7,500,000 tons for fuel coal used by originating railroads for coal hauled from mines by wagons

SHIPMENTS ORIGINATING ON RAILROADS IN OHIO, JANUARY-OCTOBER, 1920
(In net tons)

Railroad:	Commercial	Railroad Fuel	Lake	Totals
Hocking Valley.....	2,922,265	702,541	1,239,134	4,863,940
Toledo & Ohio Central.....	1,403,053	699,512	474,888	2,577,453
Zanesville & Western.....	926,836	466,730	378,600	1,772,166
Kanawha & Michigan.....	484,329	36,159	125,159	645,647
Detroit, Toledo & Ironton.....	510,542	4,180	4,860	519,582
B. & O. (Ohio Div.).....	459,824	2,632	3,336	465,792
B. & O. (Toledo Div.).....	190,289	1,277	5,208	196,774
Other railroads*.....	11,637,682	2,535,441	5,078,621	19,251,744
Totals.....	18,534,820	4,448,472	7,309,806	30,293,098

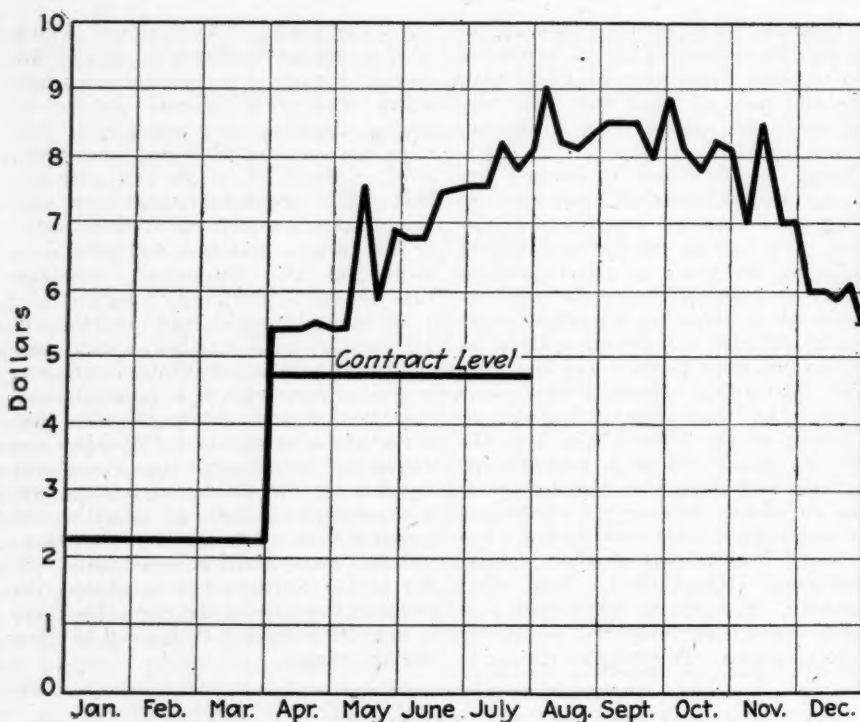
* Includes P. R. R. Lines West, N. Y. Central and several small roads.

year that prices began to descend to more reasonable levels and when demand fell off to a point where effort was required in the sales departments. Previous to December the demand was unusually strong and every ton that could be produced was easily disposed of, whether properly cleaned or dirty.

It is estimated both by the Ohio Industrial Commission and the Southern Ohio Coal Exchange that production was 11,000,000 tons greater than in

and coal used locally by industrial concerns. This estimate is believed to be within 200,000 tons of what first reports will show.

Figures showing the distribution of the commercial tonnage shipped from Ohio mines in the first nine months of 1920 show the wide distribution of Ohio-mined coal and the important part played by the Buckeye State in the industrial life of the Middle West. Of the commercial tonnage mined up to



SPOT PRICES, BITUMINOUS MINE RUN, POCAHONTAS
FIELD, W. VA., 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Pocahontas, W. Va., field in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Columbus market.

Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. On Oct. 1 a 25 per cent increase in all wages resulted in a corresponding increase in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly on April 1 and reached their peak early in August, after which the market showed considerable fluctuation. The general trend was downward, a figure of \$5.60 being reached by the end of the year. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

Sept. 30, Ohio received 11,786,157 tons; Michigan, 2,761,155 tons; Indiana, 327,896 tons; the Chicago district, 143,040 tons; Canada, 675,620 tons and miscellaneous points, 1,172,107 tons.

A study of production in all fields of Ohio during the year shows that the output was fairly steady, excepting during the midsummer months, when car shortage was the worst and when the output of all mines was curtailed to a large degree.

Until December "No market" was not a factor in limiting production. Labor shortage played its part, however, after the miners by mutual understanding among themselves took Saturday as a holiday.

Price fluctuations during the year were most unusual. The highest prices ever paid for coal in Ohio were registered and the top levels continued for an extra long period. Prices started up late in May, when some industrials entered the market with bids of \$5 and \$6 for steam coal at the mines. Coal for export was bought in Ohio.

Automobile and accessory factories were the biggest consumers and as their business was active, their purchasing agents went wild over prices. Mine run and screenings rapidly mounted from \$3@4 at the mines to as high as \$7.50@9. Prices of lump followed this trend and prices around

\$10 at the mines were paid for prepared sizes. This movement continued until the latter part of October, when some easing off was noted. Toward the latter part of November and early in December the slump was more marked and closing quotations were at lower levels than prices prevailing at

the start of the year. Lump sold from \$4 to \$5, mine run from \$2 to \$2.75 and screenings from \$1.50 to \$2.25 at the close of the year.

With the opening of the Lake trade in May, little attention was paid to procuring tonnage for Northwestern shipments. No activity was evidenced for several months until coal men and the public generally arrived at the realization that there would be a marked fuel shortage in the Northwest unless some heroic steps were taken. Pressure was brought to bear on the Interstate Commerce Commission and priority was given Lake coal, which took 40 per cent of the output of all Ohio mines. Prices on Lake fuel thereafter rose rapidly although they never reached the levels of commercial tonnage in the open market.

The production of coal in Ohio would have been fully 20 per cent greater if an adequate car supply had been available all year. The loss from insufficient cars ranged from 6 per cent in April to 20 per cent in November. The Southern Ohio Coal Exchange statistical department estimates that a total of 52,000,000 tons would have been produced in Ohio had the car supply been sufficient.

Comparatively little loss in production resulted from strikes. Strikes of minor importance were quite numerous but in most cases they were speedily adjusted.

Accidents were not as numerous as in 1919, according to a report of the Ohio Industrial Commission. Up to Dec. 24 there were 135 fatal accidents, as compared with 141 in 1919.

Prominent among the Legislative acts affecting the coal industry in Ohio was the law making it obligatory on the part of operators to supply wash-houses for their miners. A law establishing five rescue substations of the Ohio Mine Department was inoperative because the Legislature failed to make an appropriation for their upkeep and operation.

Business with Coal Speculators a Costly Experiment in the Southwest

Operators Who Sold to Profiteers are Now Without a Market—
Press Blamed for Precipitating Panic Through Ignorance and
Misrepresentation—No Actual Coal Shortage—Prosperity Forecast.

BY E. J. KNICKERBOCKER
Kansas City, Mo.

BEGINNING unfavorably, 1920 was the most erratic year in the history of the coal business in the Southwest. In the early months potential production was greater than expected demand and operators, believing this condition would continue throughout the year, took on contracts to the limit of their production in order to insure running time. Then the miners began the agitation for a further increase in wages, notwithstanding a two-year contract had been entered into in April. This agitation made consumers and dealers

apprehensive of their coal supply, and this with the stories of shortage in the East caused a buyers' panic.

The speculator, seeing his opportunity, stepped in and made bids to the operator higher than the contract prices and, unfortunately for the coal trade, some operators could not withstand the temptation and accepted the speculator's bids. The consumer and dealer, being in a panicky frame of mind, paid the speculator's price and passed it on to the householder or to the steam plant. Many of the operators, especially

the larger producers, who have been in business a great many years and expect to continue in business a great many more, did not accept the tempting offer made by the speculator, nor did they take advantage of the situation to advance prices, but continued to take care of their contracts in full and to keep their open or spot prices on a basis of cost plus a fair profit.

Some retail dealers, with orders placed early in the season at low prices, instead of handling this coal through their yards as had been their custom for years, turned speculators and sold the coal in carload lots, thereby making a much larger profit than if they had retailed to their regular trade.

As a result of this the whole coal trade has been placed in an unfavorable light with the public, and the responsibility lies entirely with the operator who did not have sufficient moral courage to ignore the bids of the speculator.

It is an old proverb that "what goes up must come down," and, applying it to the coal trade of 1920, it would seem that those who went the highest are falling the hardest. The coal panic is over, due to stimulated production, and the operators who sold their coal to the speculators rather than to their regular trade at fair prices, now find themselves without a market and without friends among consumers or dealers. Some of the operators now see their mistake and are frank enough to say that all the profits they made during the panicky period will now have to be expended to recover the trade

which they lost on account of shortsighted policy.

The daily press is equally as guilty as the operator who sold to the speculator, for the reason that in its desire to gather news it did not go into the matter and publish all the facts, but published only a part and misrepresented the coal trade. Selling prices for the higher grades of domestic coal were compared with the cost prices for mine run, whereas in the case of the Kansas field only 18 per cent of lump is obtained from mine run coal. Then again, the press failed to discriminate as between localities, and the ignorance of Kansas reporters can be judged from the fact that they apparently do not know the area of the United States. At no time during the last year has there been any shortage of coal in the Southwest, but the press constantly harped about conditions in New England, causing a buyers' panic in this territory, where there has been no occasion for anyone to be apprehensive of his coal supply.

The Southwest is not a manufacturing territory. More dependence is here placed in grain and live stock, therefore whatever effects grain and live stock in the great Southwest affects all lines of business, whereas in the East whatever affects steel to a greater extent affects all lines of business. Steel is the business barometer east of the Mississippi River, while grain and live stock constitute the business barometer in the Southwest.

Everything in the Southwest points to a prosperous year in 1921.

Coal Trade on the Pacific Hard Hit by Readjustment in 1920

Mine Shutdowns Because of Oversupply of Fuel and Small Demand, Higher Wages and Surplus of Labor Outstanding Features—Production Slumps 1,000,000 Tons in Washington—Costs Rise While Sales Realization Shrinks

BY A. M. KIDSTON
Seattle, Wash.

AS THE coal trade probably was the first in the Northwest to feel the effects of the World War, through tremendously increased demands for fuel from long-established as well as new industries, so it probably was the first to reflect the readjustment period in commerce which plagued the coal operator along with his many other problems in 1920.

During the high point of the war period in 1917 the coal trade in the Northwest rose from the estate of pauper to that of prince and then was dethroned through government price fixing. The year was an active one and scarcely ever did supply equal demand. There also was a great scarcity of labor, due to the inroad made upon the mine payrolls by the lure of greater wages in shipyards and other war industries.

Far different conditions prevailed

during the last year. It was marked by numerous shutdowns in practically all coal fields, an oversupply of fuel and little demand, higher wages at the commencement of the year and an oversupply of labor as a result of the closing down of industries previously sustained by war contracts. While every coal field in the Northwest showed an increase in production in 1917 over the previous year, not a state in the entire district last year but what will show a decrease compared with 1919, in Washington alone the decrease being practically 1,000,000 tons. This decrease last year in Washington does not convey a true index of the loss to commercial mines in the state, for while in previous year, mines owned by railroad companies have not been a serious factor, they last year produced to a greater extent than ever before.

Carrying the comparison a step fur-

ther to indicate the sad fall of King Coal, during 1917, 1918 and 1919 importations from other states were small compared to 1920. During the peak of the war period of 1917 labor strikes in British Columbia tied up production and any surplus was needed for her own industries. During 1920 between 10,000 and 12,000 tons a month were sent into the Northwest from Vancouver Island alone and the Washington Coal Operators Association is authority for the statement that fully 20,000 tons a month was sent in from other states.

The same authority goes further and states that fully 50 per cent of the coal used in Washington last year was imported, of which one-third came from British Columbia. Costs of production the last half of the year were higher than at the opening of the season, prices were lower, labor was higher and demand less. As an example of costs and sales margin, eleven operators in Washington reporting for March show sales realization per ton to have been \$3.42; labor costs, \$2.27; supplies, 28c; general expense, 48c; total mining costs, \$3.03, and margin per ton 39c.

In comparison with the above totals those for the same month of 1918 show a sales realization of 3c. per ton higher with all costs per ton less than in March last year and a margin of 59c. per ton as against the March, 1920, margin of 39c. For the state there is shown a decrease in the cost of mining in March compared with the cost in February amounting to 6c., or 2 per cent per ton. However, there was a decrease in the output per working day amounting to 14 per cent. For the entire district a drop of 20c. per ton is shown in the sales margin in March last year as compared with 1918.

During the year the foreign situation made itself felt on the Pacific coast. The inability of the Japanese to obtain coal from Chinese mines increased the demands upon British Columbia and Washington mines. Australia experienced a shortage and New Zealand, which has always depended upon her sister continent, experienced such a scarcity that ships were sent here in ballast just to obtain return coal cargoes.

Increases in prices were numerous, as during the year advances in pay of coal miners and increases in freight charges alternated in boosting the charge to the consumer. On Aug. 1 a new wage agreement advanced contract labor pay 20 per cent and day labor \$1 a day. This was the advance ordered by the National Bituminous Coal Commission. During the year wages in the Northwest fields increased a little more than 27 per cent over 1919. Coal prices in Seattle in September were as follows: Newcastle and Issaquah lump-nut, \$8.50; Black Diamond nut, \$11; Black Diamond mixed steam coal, \$8.50; Hyde mixed steam, \$8.50; Hyde lump-nut, \$10.50. Increases ranging from 19c. to \$1.94 per ton also were added to the delivered prices of coal throughout the Northwest because of increased freight rates.

The advance in the price of coal in Montana may be illustrated by Sand Coulee coal. In 1919 this coal sold at the mines for \$3.75 per ton but later advanced to \$4.75, and in August to \$7.50 and in September to \$8.50. Bear Creek coal sold in the Great Falls, Mont., market in November for \$12.

The winter in the Northwest has been unusually dull for the retail trade, with light demand. The false hope held by the consumer that the price of coal would later drop kept many from making purchases in the first part of the winter.

Dealers and operators are of the opinion that coal prices will not decline to any extent in the first half of 1921, due to the fact that many of the conditions, notably wages, which govern the price of coal will remain as at present. Costs of mine supplies show an inclination to decline but not to an extent that will be reflected noticeably in the coal bill. The labor situation promises to remain satisfactory, as is usually the case in an easy market, and with a decrease in the cost of living no new demands for higher wages are anticipated.

Development in Southeastern Kentucky Limited Only by Railroad Facilities

Received Lower Percentage of Car Supply Than Any Other Field Last Year—Extensive Additions and Betterments Promised by Louisville & Nashville R. R.—Operators Optimistic—Improved Terminals Will Encourage Exports

BY A. R. ANDERSON
Pineville, Ky.

PROBLEMS and difficulties in great variety were brought to the coal men in the southeastern Kentucky in 1920. The year brought government interference, acute car shortages, ab-

normally high and low prices, and sporadic labor troubles.

The year began with an active sellers' market under government control and closed with a dull market under control

of the old reliable law of supply and demand, with the demand end of the law more or less A. W. O. L.

Southeastern Kentucky received a lower percentage of cars than any other field in the United States in 1920, largely because of the inability of the Louisville & Nashville R.R. to handle the potential tonnage on its two eastern Kentucky lines. The Lexington & Eastern branch, extending from Winchester to McRoberts, Ky., for instance, has a potential mine capacity of about 80,000 tons of coal per day, whereas the railroad is unable to handle more than 30,000 to 35,000 tons per day. The average car supply for this road for the year did not exceed 37 to 40 per cent. This poor car supply has greatly hindered development in the field, and new development was limited to the tributaries of the north fork of the Kentucky River.

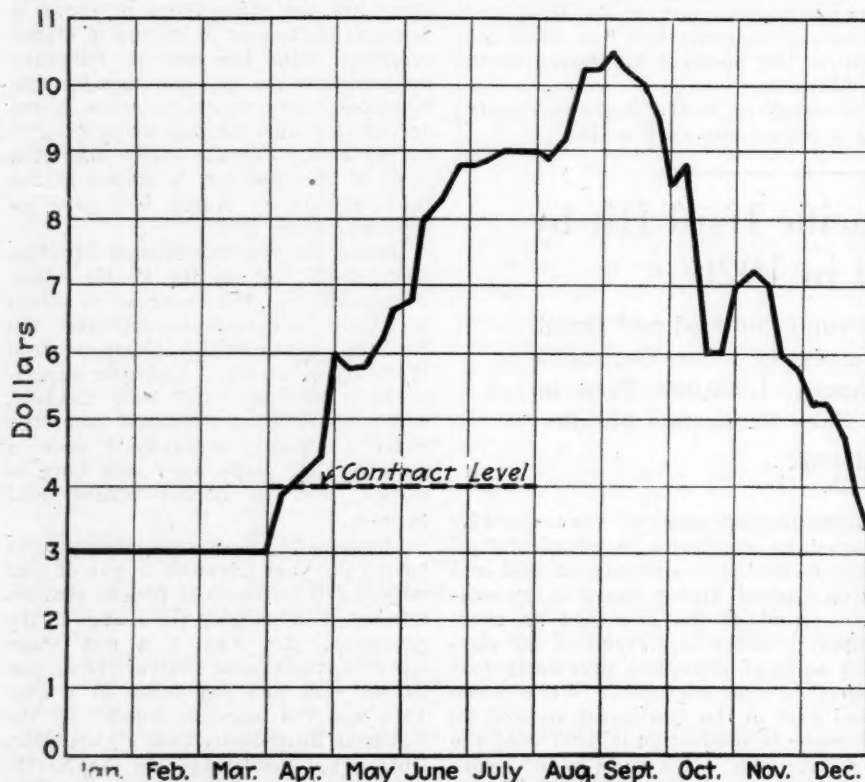
The Hazard Coal Operators Association has been persistent in its efforts to obtain better transportation and the railroad has recently announced that around seven million dollars will be spent in 1921 to increase facilities for handling coal traffic from this field.

The Cumberland Valley division of the Louisville & Nashville R.R. extends from Corbin, Ky., to Norton, Va., with a 60-mile spur running from Pineville to Lynch, Ky. This division has a potential mine capacity of about 85,000 tons per day, and the railroad officials state that 35,000 tons to 40,000 tons per day is the maximum that can be handled with present facilities. Development in this field is about on a par with that in the Hazard field, being limited to short extensions of lines reaching up the various streams that flow into the Cumberland River.

COAL COMPANY HAS ITS OWN CARS

The Black Mountain R.R., which extends up Pucketts Creek, was about completed during the year and considerable development is under way on this line. The plant of the United States Coal & Coke Company at Lynch Mines, Ky., is nearing completion, and development of tonnage from these mines is rapidly approaching the planned capacity of from 12,000 to 15,000 tons per day. This company owns its own cars and for that reason is more or less independent on the question of car supply. At present the company is producing around 7,000 tons per day, and is getting more than its proportionate share of the available motive power of the Louisville & Nashville R.R. The Wisconsin Steel Co. at Benham, Ky., also has purchased a large number of private cars and thus will place an additional drain upon the motive power of the Louisville & Nashville road. Considerable double tracking and a large increase in the number of coal cars and engines will be required to give anything like adequate service for both divisions serving eastern Kentucky.

If the Louisville & Nashville makes good its promises of greatly increasing traffic facilities, much development may



SPOT PRICES, MINE-RUN COAL, SOUTHEASTERN KENTUCKY FIELD, 1920

Diagram of spot prices, in dollars per net ton, of mine-run bituminous coal from the southeastern Kentucky field in 1920, compared with the contract market price for the same coal at the beginning of the coal year in April. Quotations taken from Louisville market. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. In the summer increases in wages of labor resulted in corresponding increases in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak early in September. The price declined rapidly but rallied slightly in November, after which it fell steadily throughout the remainder of the year. It should be remembered that a great part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

be expected in the near future, for this region has almost unlimited unmined reserves of coal of the highest quality now awaiting development. The topography of this field is such that it is almost impossible to build a main line railroad through the field and development for this reason is limited to spur lines of constantly increasing length, which with every added mile complicate the traffic problem.

Operators are generally in an optimistic frame of mind about the future, although it is admitted that the immediate future probably will provide rather rough sailing, due to the condition of the market. However, as a large percentage of coal mined here is

of a quality that sells quite readily even upon a poor market, being largely used for byproduct and gas purposes conditions promise to be better than in some other fields.

Export business ordinarily does not interest shippers from this field because of the long haul to Tidewater ports, although a special export freight rate recently was obtained for the southeastern Kentucky field to the ports of Charleston, S. C.; Savannah and Brunswick, Ga., and Jacksonville, Fla.

Terminal facilities at these ports are under process of improvement, which probably will insure a material increase in the amount of coal exported from this field.

served only to intensify the difficulty of the markets in obtaining coal. It would have been an easy matter at times for the mines of West Virginia to produce twice the amount of coal actually mined if there had been transportation facilities for it.

In the middle of the summer prices reached such a pinnacle that every mine was being operated at full blast, but by December the market had so changed that hundreds of mines were closed down. First the wagon mines were affected and then the smaller tippie mines and finally some of the larger mines began to mark time as the end of the year approached. In fact the Christmas suspension was seized upon as a favorable opportunity to discontinue operations until orders warranted reopening mines.

During most of the time of high prices operators were helpless in meeting the demand because of the limitations on distribution imposed by the service, priority and assignment orders of the Interstate Commerce Commission.

The year was a profitable one to many producers of coal and prices for a part of the year were at high water marks, yet there were hundreds of operators who sold their coal on contracts at prices far under the market, sacrificing large profits in order to stabilize market conditions to the greatest extent possible. That they did not succeed in doing so was not their fault.

PREPARED FOR READJUSTMENT

The end of the year found West Virginia operators well prepared to meet the period of adjustment and transition from high demand to normal conditions because of the profits of the summer.

The era of high prices in West Virginia in 1920 did not exceed six or seven months at the most. Efforts of producers and others in the industry to keep prices within reasonable bounds were unavailing, but it was the speculator rather than the producers who reaped the harvest of high prices, which reached their crest in August and which after that month began to decline very rapidly as the era of retrenchment was entered upon. Buyers then began to withdraw from the market and industries began to shut down, coal requirements of the Northwest alone at that time tending to sustain the demand.

It was largely the smaller and newer mines which derived the greatest profit from the reign of high prices, as they took a chance on sustained high prices rather than depend upon less compensation and a longer run of business. It was the frantic speculative bidding for tonnage for resale, however, which gave prices their upward impetus.

The labor troubles of southern West Virginia in 1920 were marked by greater violence and more loss of life than at any time since the Cabin Creek strike of 1912-13. The most serious trouble was in Mingo County, at the gateway to the other non-union fields of the state. The powerful organization of the United Mine Workers turned

West Virginia Coal Mining Operations Show Unprecedented Growth in 1920

More New Companies Launched Than Ever Before—Large Industrial Concerns Add to Holdings to Insure Steady Fuel Supply—Labor Conditions Unsettled—Output Increased 3,157,853 Gross Tons

EDITORIAL CORRESPONDENCE

UNPRECEDENTED growth of the scale upon which mining operations were conducted in West Virginia and violent fluctuations in the market featured the year 1920. The mining of coal in 1920 seemed to afford such golden opportunities that coal lands were as eagerly sought as gold mines and prospecting was carried on during at least nine months of the year on an unheard of scale. Not only were more new companies launched during the year than ever before, but at the same time large producing companies were bought and sold at large figures.

Not only were properties bought as

an investment, and many new companies formed as a matter of private enterprise, but to a greater extent than ever they were acquired by great industrial concerns in order to insure a regular supply of fuel.

The industry in West Virginia for almost eleven months of the year was keyed to the highest tension because of the extraordinary foreign and domestic demand for fuel. Despite the utmost endeavor of the coal producers of the state, it was utterly impossible to supply the demand because of inability to get coal to the markets. The make-shifts of service and priority orders

WEST VIRGINIA COAL PRODUCTION BY COUNTIES

County	1919	1920	Increase	Decrease
Barbour.....	1,308,167	1,477,714	169,547	.....
Boone.....	1,248,408	1,499,843	201,435	.....
Braxton.....	309,108	245,131	.....	63,977
Brooke.....	1,326,429	1,361,646	35,217	.....
Clay.....	449,434	498,427	48,993	.....
Fayette.....	8,062,999	7,775,010	.....	287,989
Gilmer.....	88,675	139,062	50,387	.....
Grant.....	122,476	112,733	.....	9,743
Greenbrier.....	33,695	49,207	15,512	.....
Harrison.....	4,712,132	5,181,664	469,532	.....
Kanawha.....	5,176,533	5,237,406	60,873	.....
Lewis.....	32,349	66,499	34,150	.....
Lincoln.....	206,255	222,531	16,276	.....
Logan.....	9,342,441	9,533,064	190,623	.....
Marion.....	4,400,008	4,888,841	488,833	.....
Marshall.....	939,281	947,602	8,321	.....
Mason.....	128,352	180,835	52,481	.....
McDowell.....	16,209,411	15,834,950	.....	374,461
Mercer.....	2,582,148	2,220,036	.....	362,112
Mineral.....	462,253	466,029	3,776	.....
Mingo.....	2,457,937	2,627,657	169,720	.....
Monongia.....	2,158,219	2,764,196	605,977	.....
Nicholas.....	148,099	211,812	63,713	.....
Ohio.....	637,309	1,057,890	420,581	.....
Preston.....	1,325,451	1,704,579	379,128	.....
Putnam.....	285,075	328,791	43,716	.....
Raleigh.....	6,316,678	6,773,878	457,200	.....
Randolph.....	847,257	789,942	.....	57,315
Summers.....	24,210	30,029	5,819	.....
Taylor.....	1,021,539	1,048,187	26,648	.....
Tucker.....	1,117,058	938,270	.....	178,788
Upshur.....	423,816	526,981	103,165	.....
Wayne.....	23,174	64,046	38,872	.....
Webster.....	6,599	7,371	772	.....
Wetzel.....	43,415	.....	.....	43,415
Wyoming.....	897,103	1,271,489	374,386	.....
Estimated, on all mines.....	1,000,000	1,000,000	.....	.....
Totals.....	75,875,493	79,033,346	3,157,853	.....

its attention from the union fields to the non-union fields after having failed during the latter part of 1919 to organize the Logan district.

After the failure of the strike of 1919 the United Mine Workers considered the non-union area of West Virginia the one vulnerable spot in the country, without which it was not possible to wage a successful strike. It was openly announced by the union officials that they proposed to organize the non-union mines of southern West Virginia. Early in the spring of 1920 the United Mine Workers succeeded in enrolling a number of the miners of the Mingo or Williamson field in their organization, and on May 19 serious trouble developed as a result of the attempted organization of the mines, ten men being killed—seven of them Baldwin-Felts detectives—on the streets of Matewan.

OUTPUT GROWS DURING STRIKE

On July 1, when the operators refused to treat with the United Mine Workers or recognize the union or its leaders, a strike was called—a strike marked by frequent violence, the mountainous section along the Norfolk & Western lending itself to a species of guerrilla warfare. From the very beginning of the strike coal was produced in increasingly large quantities from week to week and month to month.

Two wage advances were granted in 1920, the first as a result of the award of the Bituminous Coal Commission, and the second in September and October, when day and monthly men were granted an increase averaging \$1.50 a day. The increase in wages not only applied in the union fields but the advance in such fields was met by a corresponding increase in most of the non-union fields, the Pocahontas, Tug River, Gulf and Williamson fields in particular making a sweeping readjustment of wages paid not only to day and monthly men but to executives as well.

OUTPUT TOTALS 79,033,346 TONS

Incomplete figures show production of coal in West Virginia for the fiscal year ending June 30, 1920, as 79,033,346 gross tons compared with 75,875,493 gross tons in the preceding year, a gain of 3,157,853 gross tons. It is believed that final returns will show a gain of 5,000,000 gross tons. The largest increase was 605,977 gross tons in Monongalia County. Decreases were greatest in Mercer and McDowell counties in the Pocahontas region.

A comparison of production in gross tons for the two fiscal periods is given on page 157, the figures for 1920 being incomplete, but according to a tabulation made by the West Virginia Department of Mines.

According to figures tabulated by the State Department of Mines the United States Coal & Coke Co. was the largest producer with an output of 3,897,424 gross tons. The Consolidation Coal Co. increased its production from 2,659,901 to 3,177,933 gross tons, ranking second in production. The Pocahontas Fuel Co. was third with 2,103,589 gross tons. The Island Creek Coal Co., in Logan

County, was fourth in rank, with an output of 1,693,896 tons. The New River & Pocahontas Consolidated Coal Co., the Davis Coal & Coke Co. and the Solvay Collieries Co. each produced in excess of 1,000,000 tons.

As to what the future may hold, what

the new year may bring forth, when a change for the better may be expected, no one can venture a prediction and the uniform answer to all queries as to when the pendulum may be expected to begin swinging the other way is "one guess is as good as another."

Colorado Operators Had Successful Year; Output Nearly Stationary

Central Competitive Field Breaks Into Market in Missouri River Valley—Production Nearly Equals That for 1918—Re-adjustment Promises To Be Devoid of Violent Features

BY W. E. BOYER
Denver, Col.

COLORADO'S progress in the last decade, showing satisfying gains in population, industrial pursuits and agricultural lines, does not find a corresponding expansion in its coal activities. While 1920 was a successful year for operators, coming within 250,000 tons of the 1918 record production, its passing has brought an outlook that promises careful scrutiny of the industry's barometer for 1921. The unsolved question is this: "Why has the Colorado output been stationary for ten years?"

Keen competition from the Central Competitive Field, making inroads on the trade at Missouri River points that heretofore were easily supplied with Colorado coal, has had its effect on Colorado's coal-trade expansion. For the year 1920, of course, the answer is readily found. Tremendous demands of the World War in the previous two years pushed the abnormal trade demand to the Atlantic seaboard, and recent months found the country's business gradually settling backward to its industrial equilibrium.

Although not the only source of trouble, freight rates have been a disturbing factor with operators as well as dealers, and a source of resultant discontent among consumers, who every once in awhile start the legal machinery to probing seemingly high prices. One of the things Colorado operators expect to do in 1921 is to pay more attention to traffic problems involving Colorado shipments within and beyond the boundaries of the state.

Production in bituminous and lignite fields during 1920 was 12,379,362 tons, December figures being estimated. In 1919 the production was 10,498,000 tons, the year just closed showing a gain of 1,881,362 tons. The highest tonnage ever reached was 12,638,000 in 1918, while in 1910 the production was around 12,000,000 tons.

The average number of men employed in and about the mines during 1920 was 13,429, an increase of 630 over the preceding year's average. The men averaged 212 working days during the year as against a fraction over 221 in 1919. Output last month is estimated at 1,100,000 tons.

Wyoming's strides in coal production, on the other hand, are seen in

a tonnage for 1920 that will exceed Colorado's output by about 1,000,000 tons, while prior to the year just closed Wyoming's output fell short of Colorado's by 3,000,000 tons. Wyoming therefore seems to be keeping abreast of the country's gains in coal output, which were something like 25 per cent during the last decade. Colorado doubled its production in the ten years prior to 1910.

Coal miners in 1920 were paid \$10 to \$12 a day, against \$6 to \$8 in 1919; laborers got \$7.50 in 1920, against \$5 in 1919.

John G. Kerr, secretary of the Colorado Coal Operators' Association, speaking of the readjustment period and its demands, said: "There has been no runaway price market in Colorado. We will slide back to normal conditions without experiencing the friction that certain sections of the East must face. Our storage situation, which was upset during 1920, will get back to a normal basis during 1921.

"The extremes were crowded into the year just closed; in fact, production and prices brought radical fluctuations within a period of four months, almost eliminating at times the recognized fundamentals of supply and demand. Consumers as well as retailers were actually begging for coal, only to be canceling orders shortly thereafter."

Operators do not discuss the open shop outside of their own councils. The Colorado Fuel & Iron Co., the largest producer and distributor of domestic and steam coal in Colorado, has been using the Rockefeller plan in handling labor since the strike in 1914. Miners and heads of departments and foremen get together and settle their differences.

The miners' union has less than a 50 per cent organization in Colorado, and the events of recent weeks, which, among other things, included withdrawal of Colorado operators from the National Coal Association, have shown a tendency to get away from any influence that harbors recognition of the United Mine Workers of America.

Mine prices in both the Routt and the Cañon City fields for bituminous lump showed an advance in 1920 over the previous year, from \$4.50 to \$6, and steam from \$1.60 to \$2.50. An aver-

age increase in lignite was noted. First grade, from \$4.60 in 1919 to \$6 in 1920; second grade, \$3.60 to \$4.60 in 1919, and \$4.25 to \$4.75 in 1920. Lignite steam advanced from \$1.85 in 1919 to \$2.40 in 1920.

Freight rates on bituminous lump advanced 80c. a ton and lignite domestic 35c. in August. The advance on Routt County steam was 70c. and on lignite steam 31½c. per ton.

Denver, with one-fourth of the entire population of Colorado, consumed about one-third of the coal produced in the state in 1920. This included domestic and steam sizes for apartments, small hotels and business blocks. Total consumption was 1,500,000 tons against 1,300,000 during 1919. In 1920 prepared sizes of household coal totaled 600,000 tons, small steam 300,000 tons and industrial steam in carload lots, 600,000 tons.

The per capita consumption of domestic and industrial coal in Colorado during 1920 was three tons, while in Denver alone it was five tons. There are no available figures on the coal used for all purposes in Colorado during 1920, but it is estimated that the total tonnage was 4,500,000 tons.

Edgar Hopper, manager of the Colorado Retail Coal Dealers' Association and commissioner of the Denver Coal Merchants' Association, in discussing the events in retail channels, said:

"Colorado trade in general—wholesale and retail—has been marked by conservative movements in a trying period of unsteady sales. Margins of retailers have been reasonable, and I do not believe it necessary to consider drastic steps to bring about a complete readjustment of affairs in Colorado. We welcome any fair and unbiased investigation from any authoritative sources at any time.

"There is a tendency to put in heating plants with greater heat-giving returns. Dealers are doing what they can to educate the public as to the best manner of handling the various grades of coal. The decreased consumption from this source helps a little, I believe, to offset the larger tonnage required to take care of the increase in population."

Routt County bituminous lump late in 1919 retailed in the larger Colorado cities for \$9.25, and at the close of 1920 brought \$12.50; Cañon City lump advanced from \$9 in 1919 to \$11.50 in 1920. Freight differentials in southern Colorado caused a price variation in Walsenburg and Trinidad and Cañon City grades of bituminous.

Bituminous steam was selling for \$6.25 delivered late in 1919 and brought \$6.75 late in 1920. The freight advance on this grade was 70c. Lignite steam brought \$4.65 in 1919 and \$5.30 at the close of 1920.

Weld County lignite climbed from \$8.10 in 1919 to \$10.15 in 1920, where it is at present, and Louisville lump from \$8.10 to \$8.90. Although there is a difference in heat qualities, the 1919 strike brought second grade lignite to the first-grade price of \$8.10 a year ago.

Alabama Production Shrinks Because of Car Shortage and Labor Troubles

Market Active During First Nine Months of 1920, When Demand Weakened—Coal Trade Affected by General Business Depression—Improved Labor and Transportation Conditions This Year

By H. B. McLAURINE
Birmingham, Ala.

DURING the first nine months of 1920 Alabama's coal market was quite active but steam demand weakened sharply and domestic trade also was easier in the last quarter. Because of a scarcity spot prices reached high levels, but when greatly increased production and depressed trade conditions appeared in the last quarter, quotations receded to a normal basis. Car shortage, strikes and labor delinquency crippled production badly.

Alabama's contribution to the national coal pile in 1920 was between 14,750,000 and 15,000,000 net tons, or approximately 1,000,000 tons under the output in 1919. During the greater portion of the year operations in Alabama suffered more or less from car shortage, which at times became acute. This accounts in part for the heavy loss in output compared with previous years. Discrimination in the distribution of the available open-top equipment also handicapped commercial operations, for the railroads preferred the mines with railroad fuel contracts.

During the first quarter of 1920 the market suffered from the general unsettled industrial conditions that followed the close of the war and the demand for steam fuel was more or less restricted. However, production was far below normal during the last three months of 1919 because of labor delinquency and other causes, and producers were far in arrears on contract deliveries. Trade requirements were ample therefore to take the limited amount of free coal available during the first quarter of 1920. Stocks in the hands of railroads and other utilities and industrial plants were low, and these interests had to enter the spot market prior to April 1 to supplement receipts from contract mines, and a strong steam market developed early and was maintained until the end of September.

During the second and third quarters the steam trade was exceptionally strong, the scarcity of coal accentuating the demand and spot prices reached \$8 and \$10 per ton at the mines for both low- and high-grade coal. Following the issuance of government price regulations April 1 practically all of the larger commercial producers contracted the bulk of their anticipated output for the coal year at figures closely approximating government schedules, and there was little Cahaba, Black and similar grades of coal above contract requirements to offer the spot trade, as car shortage, preferential placing of equipment, local strikes and other hindrances to production so curtailed out-

put that practically 90 per cent of coal removed from the mines was applied against contracts. The fuel shortage became so acute in July that there was not enough coal to offer the trade to justify quotations and the small tonnage to be had went to the highest bidder, such product coming mostly from wagon mines and small rail operations developed by the strong market demand.

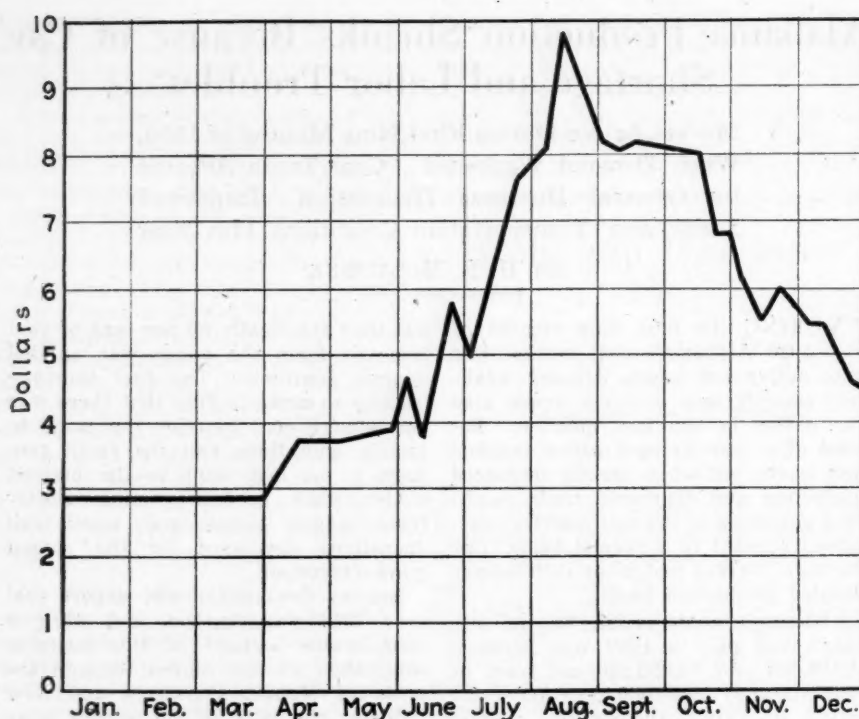
Inquiry for bunker and export coal over 1919 was marked, and while a considerable amount of this business was taken on and moved through the ports of Mobile, Pensacola and New Orleans, the bulk of the orders were rejected because of the shortage of transportation facilities for moving it.

A return to practically normal operating conditions after the general strike of Sept. 7 was closely followed by a weak steam market, occasioned by the general business depression and slackened industrial activities, and with a heavy output of coal thrown on the market, spot prices on some grades experienced a decline of 50 per cent within a period of a few weeks. Quotations for the year ranged about as follows per net ton mines for mine-run coal, prepared grades bringing from 25 to 75c. more per ton:

Black Creek	\$4.00 @ \$5.50
Cahaba	4.00 @ 5.50
Carbon Hill	3.50 @ 4.50
Big Seam	2.95 @ 4.25

The domestic trade showed great strength throughout the year, easing up slightly during the last quarter, as this grade of coal was scarce during the year. Local strikes in the early spring materially checked the output of domestic operations and caused mines to fall far behind on contract deliveries, and car shortage prevented the producers from making good the deferred shipments, which were later cancelled by the buyers. Retailers were prevented from accumulating in the summer the usual winter stocks and were compelled to supply their customers from daily receipts, and the majority of consumers purchased coal only as needed. The weather was mild except for several coal spells which developed temporary acute situations in the domestic supply. This resulted in the Legislature passing a bill creating a fuel administration.

To enable the Fuel Administrator to promptly supply coal where acute shortages existed operators representing about 85 per cent of the coal production of the state agreed with the Governor to turn over all their output above contract requirements at prices



SPOT PRICES, MINE-RUN COAL, ALABAMA FIELD, 1920

Diagram of spot prices, in dollars per net ton, of mine run bituminous coal from the Alabama district in 1920. Quotations taken from Birmingham market. The prices on this diagram do not represent any one Alabama coal, but are averages of quotations on all varieties, from steam to high grade gas coal. Through January, February and March the spot price was legally limited to the Government maximum, despite the fact that the market was strong and wages had been advanced 14 per cent over 1918, on the basis of which this Government price had been fixed. Increases in wages of labor resulted in corresponding increases in contract prices (not shown on diagram) through operation of the automatic labor clause. Spot prices rose rapidly from April 1 and reached their peak in August. After receding to the \$8 mark this level was maintained well into October, when the price joined the general decline observed in all fields. It should be remembered that the greater part of the production was sold on contracts and that the average realization of all producers will be more nearly the contract level than the average of spot prices. In general, spot and contract prices for prepared sizes ranged above those shown in the diagram, while screenings or slack were lower.

ranging from \$4 to \$6 per net ton mines, which was approximately the prices embodied in contracts. A margin was fixed for the retailer to keep him within the bounds of a fair profit.

What happens to the coal trade in 1921 will depend on a return of industrial conditions to normal. Producers are in position to mine coal to capacity of their operations, there is a plentiful supply of labor, and transportation facilities as a whole promise to be much better than in 1920. Several new self-propelling barges and a number of tow-boats have been added to the Warrior River equipment and these facilities will be greatly increased during the early part of the year by the addition of equipment now building. Coal bins are in course of construction at loading points on the river, and construction will begin soon on the \$400,000 coal terminals at Mobile. These terminals, however, will require considerable time for completion and will not be available for use in 1921.

DECLINE TO MEET UNION OFFICERS

On April 1, 1920, Alabama operators placed in effect the 27 per cent increase awarded mine workers by the Robinson Coal Commission. The operators declined to meet in conference the officials of the United Mine Workers for the purpose of formulating wage schedules and arranging working conditions, it

being ascertained that in reality the miners had no complaint against either the wage schedules or working conditions but would contend for union contracts at all operations and full recognition of the organization. Refusal to negotiate contracts with the union brought on local strikes at numerous small commercial operations and at domestic mines in the district, practically all of which were partly or permanently closed down for a time. Production was badly crippled as a consequence, but the operators later reorganized their forces and resumed operations on the open-shop basis.

STRIKE AFFECTS ALL MINES

This failure early in the year to tie up coal production and win recognition for the union brought on a general strike call in September, which affected the output of every coal mine in the State for several weeks. The strike was broken inside of a month with the return of many of the strikers to their old positions and the introduction of new labor from other sources and coal production soon assumed normal proportions, with mines operating with a very few exceptions on the open-shop basis. By the end of the year there was no evidence of the strike being in effect. Production of coal is normal although the strike call has not been officially rescinded and State militia is

still patrolling the coal fields, after having been called out in September to maintain order following the killing of a mine official and deputy by strikers.

Production in Indiana in 1920 Increased 27 Per Cent

Production of coal in Indiana for the year which ended Sept. 30 increased nearly 28 per cent, according to the annual report of Cairry Littlejohn, state mine inspector. Thirteen new major mines were opened in the year and seven worked out mines were abandoned.

The total amount of coal mined during the year was 30,415,675 net tons, compared with 23,859,562 net tons in the preceding year, an increase of 6,556,113 tons, or 27 per cent. Small mines produced approximately 2,000,000 tons in 1920, compared with 713,213 tons in the preceding year. This is attributed to the higher prices paid for coal in 1920, which encouraged the operation of smaller mines. Excluding the tonnage of the small mines 16,469,309 tons were consumed in the state and 9,946,566 tons were shipped out of the state. In 1919 13,788,197 tons were consumed in Indiana and 8,358,152 tons were shipped out of the state.

The total number of employees in 221 major coal mines was 27,076, approximately 2,000 men were employed in the 344 small mines and stripping operations. The average wage for the year was \$1,480.90, as compared with \$1,116.42 in 1919. In 1920 the average number of days worked by employees was 148, as compared with 157.9 in 1919. Mr. Littlejohn received reports of 4,282 accidents, of which ninety-five were fatal.

Attention is called to the need of conserving coal. Under the present system of mining 50 per cent of the coal is lost to future generations and regulatory methods should be adopted by the state. The principal causes of this waste of coal, said Mr. Littlejohn, are mining of thicker seams below thin seams, abandonment of mines before the territory is thoroughly excavated, and the fact that much slack and small coal is permitted to accumulate in the mines, creating favorable conditions for spontaneous combustion.

Prevailing Prices of Contract Coal, Illinois and Indiana, April, 1920

Southern Illinois—Franklin, Saline and Williamson Counties

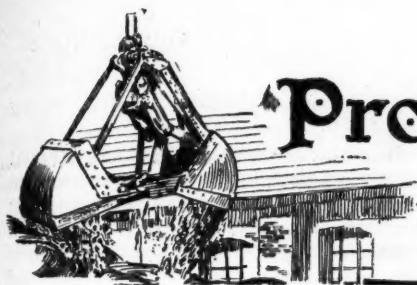
Domestic Sizes: (Retail Dealer Contracts), \$3.90 to \$4.15 for the month of April, then increasing 10c per ton per month, until Nov. 1. Thereafter contract price was \$4.50 to \$4.75.

Steam Coal:
Prepared sizes..... \$2.75 to \$3.50
Mine run..... 2.45 to 2.70
2-in. screenings..... 2.25 to 2.50
1½-in. screenings..... 2.05 to 2.25
No. 5 carbon..... 1.75 to 2.00

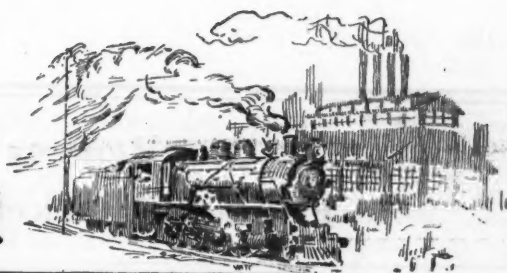
Clinton, Ind. (Fourth Vein District):
Prepared sizes..... \$3.00 to \$3.50
Mine run..... 3.00 to 3.25
2-in. screenings..... 2.65 to 2.85

Knox County, Ind. (Fifth Vein):
Prepared sizes..... \$2.90 to \$3.10
Mine run..... 2.65 to 2.85
Screenings..... 2.05 to 2.40

Springfield, Illinois District:
Prepared sizes..... \$2.75 to \$3.10
Mine run..... 2.25 to 2.75
Screenings..... 2.00 to 2.25



Production and the Market



Weekly Review

OPTIMISM pervades the coal industry despite the continued hammering down of prices, lack of seasonable demand and immense curtailment of industrial consumption. There has been some resumption of operations by textile, automobile and other manufacturing interests, but the coal man is still languishing in the doldrum of an extremely sluggish market.

Notwithstanding the present general industrial condition, shippers are gratified by the way contract orders are holding. Movement to New England, both by water and all rail, shows a substantial increase for the week ended Jan. 8. Public utility coal stocks in New York City increased 224,000 tons for the same period. Tidewater dumpings also show considerable gains.

SELL COAL FOR FREIGHT CHARGES

Railroads are "plugged" with coal, due to heavier offerings and lighter consumption made possible by the decline in general freight movement. Rejections are numerous and these and other forced sales have been made at ruinous figures, coal having been sold for the freight charges.

Middle Western operators have generally abolished the practice of consigning coal unsold to their sales connections, finding it an unprofitable procedure. The increasingly numerous sales of Eastern coal at forced figures indicate the state of overproduction which prevails in those fields.

Bituminous production during the week ended Jan. 8 is estimated at 11,083,000 net tons, according to the U. S. Geological Survey. The new year opened with ample car and labor supply, and with "no market" losses the main factor in holding down the output.

With the exception of the strike center of West Virginia, nearly all fields have an oversupply of labor. Practically all bonuses and other inducements have been abolished and the men are working efficiently at the wage scales established for the various districts.

COAL PLENTIFUL AND CHEAP; BUYERS FEW

One of the things that illustrates the uncertain attitude of mind of consumers today is found in the way coal is not being bought. Six months ago industrials invested hundreds of thousands of dollars in high-priced coal—today when coal can actually be had at sacrifice figures in many instances and in special cases well below our current quotations, the coal goes begging. It goes begging in part because there is no ready means of getting buyers and sellers together, and coal is left standing on track without buyers in sight. Such occurrences are necessary concomitants of an unsettled coal market and will soon pass as the trade settles down to business and better appraises present demand. For a few weeks at least bargains in coal may be picked up. Present quotations represent the basis of trading today

—actual figures at which individual sales are made are meaningless unless accompanied by full details covering the particular circumstances surrounding the transaction.

The following table shows the trend in the spot steam market (mine run basis, net tons, f.o.b. mine):

	Nov., 1919*	May, 1920	Aug. 5, 1920	Jan. 6, 1921	Jan. 13, 1921	Jan. 20, 1921†
Pittsburgh steam.....	\$2.35	\$4.00	\$10.00	\$2.60	\$2.50	\$2.50
Pittsburgh screened gas.	2.35	4.50	12.00	3.15	3.15	3.50
Hocking.....	2.50	4.75	9.00	2.50	2.50	2.85
Franklin, Ill.....	2.35	3.75	6.50	3.00	3.00	2.85
Indiana, 4th vein.....	2.35	3.40	7.50	2.75	2.75	2.50
Eastern Ohio, No. 8.....	2.35	4.50	10.50	2.75	2.75	2.75
Fairmont.....	2.50	6.75	13.50	2.40	2.20	2.15
Kanawha.....	2.60	6.75	14.00	2.80	2.70	2.70
S. E. Kentucky.....	3.00	6.00	10.50	2.90	2.80	2.80
Western Kentucky.....	2.35	3.50	5.25	2.60	2.60	2.25
Clearfield.....	2.95	6.25	12.00	3.25	3.00	2.85
Cambria and Somerset.....	2.95	6.75	13.50	4.35	3.60	3.60
New River.....	2.70					
Pocahontas.....	2.35	6.50	14.00	4.50	4.50	4.60

* Government prices.

† Advance over the previous week shown in heavy type, declines in italics.

Tidewater movement during the week ended Jan. 9, recovered sharply from the holiday depression and reached the highest point attained since the last week in October. According to the U. S. Geological Survey, 1,261,000 net tons were dumped over the tidewater piers. New England shipments were 251,000 tons, while exports were 371,000 tons. Bituminous dumpings during December amounted to 4,311,000 net tons, a decrease of 1,425,000 tons compared with the October record.

Total shipments to Tide, as shown in the following table, amounted to 53,784,000 net tons during 1920, of which 21,778,000 tons or 40 per cent went for export. This is the record exportation of bituminous coal by water.

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Coastwise						
to New England	2,717,000	809,000	783,000	6,142,000	6,000	10,457,000
Exports.....	17,000	2,770,000	4,951,000	13,290,000	750,000	21,778,000
Bunker.....	3,965,000	662,000	888,000	3,550,000	106,000	9,171,000
Inside Capes		1,934,000	1,168,000	304,000	4,000	3,410,000
Other tonnage	8,126,000	16,000	41,000	740,000	45,000	8,968,000
Total.....	14,825,000	6,191,000	7,831,000	24,026,000	911,000	53,784,000

Anthracite production during the week ended Jan. 8 is estimated at 1,793,000 net tons, greater by 211,000 tons than production during the 5-day week immediately preceding. The wholesale market showed a decline of from 50c. to a dollar under the prices of the preceding week. Independent quotations ranged \$10@10.50 f.o.b. mines, while company figures remained unchanged.

Beehive coke production continued to decline during the first week of the new year. Estimates of the Geological Survey place the output at 272,000 net tons, a decrease of 6,000 tons when compared with the preceding week. The Connellsville spot market is quotable \$5@5.50 for furnace and \$6.50@7 for foundry. Merchant producers have vigorously restricted production so that offerings are light. Furnaces are taking no interest in contract overtures.

Reports From the Market Centers

New England

BOSTON

Dull Market Unrelieved—Some Interest in Contracts—Spot Quotations Very Low—Distress Coal Occasionally at Tide—Anthracite Conditions Improve.

Bituminous—The current situation shows no symptoms of change. The patient will get well, but there seems no one in the trade wise enough today to fix a time for recovery. Most steamers have all they can do to store shipments now coming forward on contract; others are yielding somewhat to the blandishments of shippers who are now, at this late day, offering to deliver coal that was sold nearly a year ago for season shipment. The volume of this tonnage is not large, for the number who consider inferior or medium grade coal a purchase at last year's contract figure between \$3 and \$4 is relatively small. Receipts are again falling off both all rail and by water, and there has been no significant development in the industrial situation to warrant any more hopeful forecast than we have been able to hold out for some weeks.

A very mild interest in contract figures has come to light the last few days. Buyers are for the most part rather diffident, however. Operators who are producing coal on a large scale must know what their commitments are to be before they lay out plans for the twelve months beginning in April. There is so much guessing as to conditions later on that it will be very interesting to see what progress is made in closing up tonnage on anything like last year's basis.

Spot prices continue very low. Good grades from the South Fork district have been sold the past week at \$3 for January shipment, and coals from Somerset and Fairmont have been reported down to \$2.50@2.75. The New England railroads seem now to have pretty well disposed of coal on their hands either because rejected on account of quality or held for freight charges.

At Tidewater there are many reports of distress coal that has been moved at extremely low figures. A price of \$1.28 per gross ton at the mine is said to have been realized on some demurrage coal at one of the New York piers, and doubtless similar tales can be verified at the Philadelphia terminals. At Baltimore also there are lots of high-volatile coal that have been offered freely in this market, but with no takers.

Hampton Roads remains extremely quiet. Daily dumpings are far below the figures for last summer, and there

are light steamers in every port awaiting charter. Prices per gross ton f.o.b. vessel at Norfolk are around \$7@7.25, but inquiry here is still very much restricted. One of the railroads that was taking coal freely has now shut it off because of accumulation.

Current quotations on bituminous at wholesale range about as follows:

	Clearfield	Cambrias and Somersets
F.o.b. mines, per net ton.....	\$2.25@3.50	\$3.00@4.25
F.o.b. Philadelphia, per gross ton.....	5.18@6.60	6.00@7.40
F.o.b. New York, per gross ton.....	5.65@7.10	6.50@7.85

Anthracite—While producing companies are not increasing shipments in the volume expected, yet output has increased and we shall doubtless get our share before many weeks have passed. A few of the smaller producers are offering cargoes of assorted sizes for immediate shipment and this makes the task of distribution all the harder for those shippers who have been delivering coal consistently throughout the season. Most retail dealers are very loyal, however, to their more dependable sources of supply, and in another month we shall probably see anthracite requirements measurably well cared for, at least for the current season.

Tidewater—East

NEW YORK

Anthracite Situation Easier—Urgency for Shipments—Steam Coals Are Slow—No Demand for Bituminous—Stocks Accumulate—Several Piers Embargoed.

Anthracite—Unusual weather conditions play an important part in the hard-coal situation. Larger tonnages are coming to Tidewater only to be quickly absorbed, but the feeling that there is going to be a shortage of coal is lacking. While most retailers have only limited stocks on hand and are still willing to take all the coal they can obtain, they are not urging the matter of deliveries, so confident are they that they will be able to get plenty of coal to keep their customers supplied.

Independent operators are having no trouble to dispose of their product but quotations are lower, in most instances ranging \$9.50 @ \$11. That conditions are improving is evident from the attitude assumed by some New England dealers who refuse to pay independents more than the 75c. differential above the company schedule.

Steam coals are accumulating rapidly, as demand is slow. The best grades of buckwheat are quoted \$3.50

@\$3.75, rice \$2.50@2.75, and barley \$1@1.50.

Bituminous—The market is almost at a standstill. Demand is slow and quotations low. Stocks are rapidly accumulating, although it is said that about 75 per cent of the mines are not operating, due to the lack of demand and low prices.

The partial resumption of various industries throughout the country leads some operators to believe that business will soon improve and that there will be a ready market for most of the coal produced. Inquiries regarding contracts for the coming coal year are numerous, but few have been closed to date.

Due to the lack of demand and the shipments to Tidewater, embargo orders were placed against several of the loading piers. There are many loaded boats in this harbor, some of which were let go at prices said to be below the cost of mining.

Quotations for the various pools, at the mines, range about as follows: Pool 9, \$3.25@3.75; Pool 10, \$2.75@3.25; Pool 11, \$2.25@2.50 and Pool 18, \$2@2.25. Tidewater quotations are about as follows: Pool 9, \$6.25@6.75; Pool 10, \$5.50@\$6 and Pool 11, \$5@5.50.

PHILADELPHIA

Hard Coal Demand More Easy—Dealers Accumulate Light Stocks—Steam Prices Cut—Bituminous Unimproved—Prices Shade Down.

Anthracite—Cold weather visited the city this week, but this contributed little to the demand for coal. Dealers have sufficient stocks to take care of the demands from day to day. It will take weather of the severest kind to cause any actual suffering and dealers are fast coming to realize that they do not need a great quantity of coal to meet the public need. The expected break is not yet in sight, but the local situation is approaching a state of quietness, with receipts showing signs of gaining in the yards.

Consumers are really concerned over the question of price. Dealers are experiencing calls of customers who inquire whether there is not going to be a considerable price drop. Their idea seems to be something like \$3 or \$4 a ton. This is actually becoming annoying to the dealers, especially in view of the fact that no decrease in price seems at all likely until spring, and then only a most moderate one.

Pea is inclined to be slow, and some dealers using considerable independent coal have complained that shippers are sending more of this size than they wish. The individuals are believed to be somewhat concerned over this phase. Independent prices are all holding firm, but some of the top-notchers are inclined to let down a trifle.

Steam coals continue very week and although the big companies have not as yet been compelled to dump coal in storage, they are coming quite close to it on rice and barley. It has been said that one of the companies has accepted

a price as low as \$1.75 for barley per gross ton for Tide delivery. There are instances where the individuals have made even greater cuts. Company buckwheat is kept to the \$4.25-price, but smaller producers are glad to get \$4.

Bituminous—There has not been the least sign of increased demand, while prices have again shaded off. Pool 1 is offered \$4, Pool 9 at \$3.50, Pool 10, \$3, while Fairmont gas coals in Pool 34 are \$2.25.

Reports that large numbers of mines are shut down is giving the feeling that this curtailment of production will be the means of halting the downward trend of prices. With the lessening of production the demand for prompt shipment will have a tendency to stiffen the market.

Consumer buying is centered on current demands, with a fair number of inquiries as to contract prices. Quite a few consumers appear to be willing to close contracts at the prices they are buying on the market at this time, but the producer is not at all inclined to close on this basis.

Coke—There is little demand, even at quotations of \$7.25 for 72-hour standard Connellsville and \$6 for 48-hour. Medium sulphur foundry is quoted \$5.50 and furnace \$5.25. The market for sized coke is becoming more restricted, prices for large stove and egg being \$7.75 and small stove and nut \$7. These prices are all net tons at ovens.

BALTIMORE

Increasing Number of Mines Closing Indicates Bottom of Decline Has Been Reached—Turn-Over of Pool Credits—Hard Coal Run Continues Good.

Bituminous—The feature of the market is the increasing number of reports of closing of operations. This is true in both the gas and steam coal fields. On the face of things this may mean discouragement, but many coal men here look upon it as a determination not to sell below actual production costs and at least a small margin of profit. The firm holding of prices to a dead-line and then closing will certainly mean a curtailment that will start the market again.

Best steam coals are selling around \$3.15@3.25. Some sales have possibly been as low as \$3, but this is the exception. Pool 11 has sold as low as \$2.15, but around \$2.40 is the more general price. Gas coals are offering freely, \$2.75@3, with best gas screened around \$3.15. There has been much trading in pool credits here. In this widespread bargaining there have been sales of credits as low as \$1 a ton. The feeling of some is that the price should be \$2@2.50. The trading in credits and debits seems to have been started largely to clean out accounts and get a fresh start. Some trading of debits and credits has been without money consideration, one being traded for the other. A side-line feature just now is the howl from some mines which sent through coal

to Tide at the highest price-level periods without proper consignment and leaving the consignee in doubt as to his credit rights. Some such credits are now being "squared" on the basis of the present market level, and lively kicking is in progress.

Car supply continues 100 per cent on all roads. The number of ships at piers and awaiting loads is now averaging daily around ten. Export movement is only fair, the record for the first half of the month being around 95,000 tons cargo.

Anthracite—The run of hard coal continues good, and the trade is hoping that the record made in December, when 1,708 cars were delivered, will be repeated for January. While there were a couple of cold days the past week, the run of exceptionally mild weather holds. The average person calls the condition a blessing in these days of business reconstruction and unemployment, and the coal man who feared real famine troubles earlier in the season is rather inclined to join with this view.

BUFFALO

Bituminous Trade Dull as Ever—Consumers Have Heavy Stocks—Coal Selling Below Cost—Anthracite Doing Well.

Bituminous—Demand as light as ever, so that it is hard to stimulate buying, even by making deep cuts in the price. Many reports of good coal offering at a fraction above \$2 are enough to show that the consumer is indifferent to the trade. The jobbers' offices are full of letters from operators with whom they have not dealt regularly, asking if they cannot dispose of just a few cars that have been left over.

There are two closely allied reasons for the stagnation. Consumers are not using much coal and they do not want to buy on a falling market. Besides, they are loaded up with stock. If the consumers really understand the condition of the market, that coal is now at bottom prices and will bring more before it does less they would make a special effort to put in stock and protect it, but they are so given to look on the advice of jobbers as a mere scheme for selling coal that they often miss a chance.

Car efficiency is as good as the best. Shippers are astonished at the quick deliveries. The weather favors rapid movement and this also hurts the trade, for about the only real advancer of bituminous prices is car shortage. Months ago it was said that mining was 20 per cent over consumption and that there was twice the amount of coal above ground than there usually is at this time of the year. In spite of quite a good many mining suspensions these conditions continue to grow worse.

Bituminous prices are about what the consumer will pay, but at least some coal is selling at \$4 for Youghiogheny gas, \$3.50 for steam lump, \$3 for mine run and \$2.25 for slack. Much of it is selling for less.

Anthracite—The seller and the consumer of hard coal do not quite agree over the situation, but it appears that the shortage is slowly disappearing, though it may be a considerable time before anyone can get as much as he wants. Those who bought in the summer time are supplied, others are getting enough to keep them going.

The better state of things all turned on the steadier work of the miners and if there is no further trouble there the trade will be back to normal before long, especially if the winter continues mild. A winter like the last one would have seen much distress.

Coke—Demand does not improve, for all furnaces are neither running at a slow rate or are shut down. There is prediction of a good season, if only because the supply of iron is not heavy, but the furnaces continue to buy sparingly. With a great part of the coke ovens shut down on account of contracts not all being accepted now, there is but small demand on the city jobbers for coke. About all they get is quotations from the ovens; \$7.25 for 72-hour Connellsville foundry, \$5.25 for 48-hour furnace, and \$5 for off-grades and stock.

Northwest

MINNEAPOLIS

All-Rail Market Demoralized—Dock Prices Fairly Well Maintained—Much Demurrage Coal Weakens Illinois Prices.

The coal trade of the Northwest can sympathize with the farmer this winter. The farmer had to pay high priced labor last summer and fall for raising and harvesting his crops and when he had his grain to market he found a falling market. The coal man had to do the same thing—work in season and out, to get forward a supply of coal for the winter, paying extreme prices, and so far he has had hard sledding to get a return on his investment.

The past few days has seen continued demoralization in this market. All-rail screenings have simply gone to pieces. Some are almost offered for the freight. The mine price on northern Illinois screenings is not quotable. Mine run is from \$1.50 up. Better grades of Illinois coal are a little stronger. Much demurrage coal has been offered, making a steady market price impossible. Only prepared sizes of the best grades of Illinois coal have held at all steady.

Dock coal has escaped much weakness. Screenings are off from the high prices, and show a drop of 50c. or more. On regular sizes, there is a steady drawing down of the top prices, so that the range is now around \$9@11 at the dock. As yet it is hardly so much a question of price as of a demand, for buyers are not at all inclined to take hold at any price. As long as dock operators feel that they can clean up their holdings during the remainder of the season, they will be inclined to hold closer to their price.

They feel that they can get one price about as readily as another. It is only when competition for business reaches the point of seeking each other's trade, that price-cutting is likely to set in seriously. But since there is now little chance of there being a shortage, an effort to get from under is likely to be started any time.

The four or five weeks remaining of the active part of the winter season will have to develop more business than seems probable, if there is not to be some coal left over on the docks, on which a loss will probably be taken. It will not be much in tonnage, as such left-over stocks run, in fact, it is certain to be less than the average. But whatever it is, will mean a loss if the new season's prices are materially lower, as they are expected to be. There is already a start being made toward lower costs. Yard men's wages are being reduced. So far it applies only to laborers in the yards, but the same cause which brought this about may extend the cuts further.

The only thing that the coal trade has not to contend with this winter, has been car trouble. The railroad situation for the past two months has been about all that could be asked. There has been no shortage of cars, no serious delays in traffic movements, and nothing to handicap the prompt distribution of coal. Had this been the case last spring, this winter's grief, as to extreme prices, could never have occurred.

Inland West

MIDWEST REVIEW

Steam Demand Unimproved — Cold Weather Aids Domestic — Prices Stabilize.

During the past few days the weather has been fairly seasonable although not cold enough to bring much strength to the domestic market. Dealers are buying very closely and in abnormally small quantities, while buyers of steam coal appear to have left the market in a body.

The most popular coal in the Middle West today comes from Franklin County and districts in southern Illinois producing high grade coal. This is because coals from the two fields are not expensive and quality and preparation is assured. The retail trade wants quality coal but on account of the general situation both from an industrial and farming standpoint, is not able to pay high prices.

A careful survey of the industrial situation is not particularly hopeful. Reliable reports give the observer the impression that about the same number of factories are closing down as are resuming activities, although some of the more optimistic coal operators had hoped for better things after the first of the year.

Very little coal is now being shipped on consignment to our industrial cen-

ters. Indiana and Illinois operators had a pretty stern lesson driven home to them lately when they consigned large shipments of steam coal to Chicago and other steam using points. The coal was moved but at great sacrifice in price, which thoroughly demoralized the market. The thoughtful operator, who is looking ahead and bearing in mind that the contract season is approaching rapidly, is refusing to operate his mines at a loss and is preferring to close and wait until such a time as the industrial situation warrants the resumption of operations.

The question of car supply has vanished in thin air, as have practically all labor troubles. The labor situation demonstrates that miners are fully aware of the conditions which are faced by the coal industry and are doing their full share to produce coal efficiently, and consequently cheaply.

Market quotations are varying some but there is a decided inclination toward stabilization of prices, as quotations received from day to day do not vary nearly as much as they have heretofore. Current prices are as follows:

Southern Illinois (Franklin, Saline and Williamson Counties):		
Prepared sizes.....	\$3.50 @	\$4.50
Mine run.....	2.50 @	3.25
Screenings.....	2.00 @	2.75
Springfield District (Central Illinois):		
Prepared sizes.....	\$3.00 @	\$3.75
Mine run.....	2.00 @	2.50
Screenings.....	1.00 @	2.15
Northern Illinois:		
Prepared sizes.....	\$4.00 @	\$4.25
Mine run.....	3.00 @	3.50
Screenings (washed).....	2.50 @	3.00
Indiana (Clinton and Linton Fourth Vein):		
	State.	Outside State
Prepared sizes.....	\$3.45	\$3.15 @ \$4.25
Mine run.....	3.20	2.25 @ 2.75
Screenings.....	3.00	1.75 @ 2.50
Indiana (Knox County, Fifth Vein):		
	State.	Outside State
Prepared sizes.....	\$3.25	\$3.10 @ \$4.00
Mine run.....	3.00	2.00 @ 2.75
Screenings.....	2.80	1.00 @ 2.25
Pocahontas and New River:		
Prepared sizes.....	\$5.00 @	\$5.50
Mine run.....	4.50 @	5.00
Hazard and Harlan (Southeastern Kentucky):		
Block.....	\$5.25 @	\$6.00
Egg.....	4.75 @	5.75
Hocking lump.....	4.25 @	4.75
Smithing.....	5.25 @	6.00

CHICAGO

Market Very Stagnant — Opportune Time for Steam Buying.

The local market continues very stagnant, although when compared to such markets as Detroit and Cincinnati, is in pretty fair shape, as there have been no instances so far where coal was given away for the freight.

The domestic market is not too good, because some Eastern operators with mines in West Virginia and Kentucky have been consigning train loads of coal to Chicago. In a great number of instances this arrived before it had been sold and after it began to draw demurrage it was sold at very low prices.

The steam coal situation remains just about where it was a week or two ago with plenty of coal offered and few buyers found. Practically all of the big industries are slowed down. Railroads are not purchasing much and are not

planning to until they reduce their storage piles. It is hard to understand why some of our big industrial concerns do not step into the market and buy some coal. It is no trick at all to pick up quotations below actual cost on almost any kind of fuel. Nearly everybody has confidence in the belief that the industrial situation will soon straighten out and manufacturing activities once more resume. This being the case, it is our opinion that it is an opportune time for some big steam users to buy.

CLEVELAND

First Lake Contract Made at \$3.50—Railroads Urge Early Shipments—Steam Prices Shaded Further—Anthracite and Pocahontas Easier.

Bituminous — Last week's outstanding feature was the closing, on Jan 13, of the first contract of the year for Lake coal. A price of \$3.50 a ton on 50,000 tons was obtained. Involving as it does a fairly large tonnage, this indicates the price which may be expected to rule on bituminous lump coal for shipment to the Northwest during the coming season.

Interest in 1921 Lake contracts has appeared much earlier than usual this season, despite early reports of mild weather and decreased industrial consumption at the Head-of-the-Lakes.

Railroads serving the eastern Ohio mine fields are urging operators to prepare for an early movement of coal to Lake ports this year. March 15 is set as the time when shipments from the mines to the docks will probably be started. Cars are now plentiful and the roads fear that a shortage may develop in the early summer when general business conditions may be improved.

Continued dullness exists in the coal trade with prices showing a tendency to sag still further. Industrial consumption has not picked up greatly and unusually mild weather has limited the domestic demand.

Steam coal is selling around \$2 a ton for slack and in some instances even lower prices are reported. Steam 3-in. is obtainable at No. 8 mines for \$3@3.25 and domestic lump is \$3.75@4.50. West Virginia splint is quoted \$5.60@6 at the mines.

Bituminous receipts at Cleveland for week ended Jan. 8, were: industrial 1,336 cars, retail 514 cars; volume of industrial representing a minimum.

Anthracite and Pocahontas—Shipments are showing improvement and continued mild weather has served to keep the demand rather light. There has been no change in retail prices.

Following are the retail prices of coal per net ton delivered in Cleveland:

Anthracite—Egg, grate, chestnut and stove, \$15.45.
Pocahontas—Shoveled lump, \$11.90; mine run, \$11.

Domestic Bituminous—West Virginia splint, \$11.75; No. 8, Pittsburgh, \$9.30; cannel lump, \$15.75.

Steam coal—No. 6 and No. 8 slack, \$7.50; No. 6 and No. 8 mine run, \$9; No. 8 3-in. lump, \$8.90.

ST. LOUIS

Continued Slump in Standard Coal—No Market for Steam or Domestic—Many Mines Idle.

Even with a continued cut in Standard prices there is no market for the coal. Screenings are down to 90c. Mine run is \$1.90. Two-inch lump has been offered as low as \$2, with 6-in. as low as \$2.75. General prevailing prices are: screenings \$1.15, mine run \$2, 2-in. lump \$2.50, 6-in. lump \$3. Many operators, however, are unable to produce the coal at these figures and such mines are idle. Reports show an average of 30 mines idle every day for the past week or more on account of no market. The manufacturing business has not resumed as yet in the volume that the shipper anticipated. The industrial situation in the country and in the out-of-town markets is not any better than in St. Louis, so that steam coal is unusually hard to move.

Mines that are working get from one to four days a week. Railroad mines get three to four days, but the railroad tonnage has been curtailed lately and some big losses are being taken in the Standard field where outputs for contract brought big prices several months ago.

In the Mt. Olive field a little better working time prevails. Railroad coal keeps the mines going, as the domestic business does not amount to more than a day and a half per week. Circular prices are pretty well maintained at \$4 for all sizes. Coal from Montgomery County that is sold as Mt. Olive in this market is going as low as \$3.25 for domestic sizes, and Worden coal is \$3.50.

In the Carterville field steam coal is a serious handicap. It is almost impossible to move it and many mines are shutting down on account of no market. Domestic mines get from two to four days work a week as a rule and the railroad mines get a little better working time. The car supply is good and no labor troubles in any of the southern Illinois fields. Carterville prices with the larger operators are circular, \$4@4.25 on domestic, screenings about \$2.25 and mine run \$3@3.25. Independent prices are getting down to \$3.50 on domestic sizes, \$2.75 on mine run and \$1.75 on screenings.

COLUMBUS

Dullness Continues—Some Industries Resume Operations—Production Is Decreased—Steam Prices Are Extremely Low.

Unfavorable weather conditions, coupled with the let-up in industrial circles have reduced the demand to a rather low point. Price tendency is still downward. Practically all small mines and a number of larger operations in Ohio have ceased to operate. Coal men generally are not discouraged over the outlook as better things are anticipated after April 1.

Domestic trade is still the strongest point in the market. Retailers are buy-

ing to a certain extent. But dealers are not inclined to accumulate large stocks under present circumstances and there are still quite a number of cancellations. Prices are still declining but the movement has been arrested by the fact that so many have high-priced coal to sell.

The steam trade is dull to the extreme. About the only steady source of business is from railroads, which are taking only a fair tonnage. Some industrial plants are getting under headway again and this movement is expected to be widespread. On the other hand, many of the suspensions are indefinite and there is no way of determining the time of resumption. Recent developments have shown that a large part of the coal shipped on consignment is used up and mine owners are operating only when orders are booked.

Production is at a rather low ebb, shown by the report of the Southern Ohio Coal Exchange for the week ended Jan. 1. Out of 382 mines reporting, with a capacity of 515,346 tons, a total of 293,362 tons was produced.

Prices at the mines of the principal coals used in central Ohio are:

Hocking lump.....	\$3.75@4.50
Hocking mine run.....	2.00@2.50
Hocking screenings.....	1.35@2.00
Pomeroy lump.....	4.00@4.75
Pomeroy mine run.....	2.00@3.00
Pomeroy screenings.....	1.50@2.00
West Virginia splints lump.....	4.75@5.50
West Virginia mine run.....	2.25@3.00
West Virginia screenings.....	2.00@2.50
Pocahontas lump.....	5.75@6.50

CINCINNATI

Slight Improvement in Demand—Some Industrial Resumption—High-Cost Mines Still Out of the Running.

A slight improvement in the market was noted during the past week, mine prices of steam coal showing a slight advance, while the demand was brisker, due to resumption of operations of several large manufacturing plants in the Cincinnati district.

While the outlook, judging from the week's transactions appears to be encouraging, the demand for steam is not yet strong enough to warrant the re-opening of many smaller mines in Kentucky and West Virginia which shut down more than a month ago. Operators say that the prices being received for steam coal are still and will be for some time, below actual cost of production at many mines.

Too much faith in the outlook, based on these re-openings, cannot be placed at this time. While this resumption may be a forerunner of better conditions this fact is not yet assured and it is doubtful whether market conditions will show any decided change as a result.

Continued mild weather is the cause of the dead domestic market. Many consumers are laying off buying any extra coal, believing they will be able to manage with the coal now on hand.

No change is noted in retail prices, which are; bituminous lump, \$9.25@10.50; mine run \$8.50@9.25; smokeless lump and egg, \$11.25; mine run, \$10@10.50; anthracite egg, \$15@16.25; domestic egg coke, \$14.50@15.

DETROIT

Bituminous Continues in Light Demand—Some Further Slight Price Concessions.

Bituminous—Wholesalers and jobbers find it difficult to interest buyers to a point where orders will be released. In the case of a number of factories practically no additions are being made to coal supply except the small amount that is arriving to apply on long standing contracts. Jobbers say they find few attempts to abrogate contracts and that buyers feel that although present prices in the open market may be lower, they will strike a fair average in view of the saving made possible under contract prices at the time when coal in the open market was selling much higher last summer and fall.

The circumstance that not very much bituminous coal is being sent to Detroit is regarded as fortunate in preventing the accumulation of demurrage stocks. The difficulties of this nature so far encountered have been little more than incidental.

West Virginia lump is quoted at the mine around \$4.75. Mine run is offered at \$3 and nut and slack at \$2.25. Domestic lump from Ohio mines sells at \$4.50 while mine run is around \$2.75 and nut and slack about \$2. Small quantities of smokeless mine run are being offered at \$4.75.

Anthracite—With moderate weather conditions, household consumers have not felt the shortage as seriously as was expected last fall. Receipts are light and deliveries uncertain.

Southwest

KANSAS CITY

Demand Is Low, but Call Seen with Colder Weather—No Change in Circular Prices.

There have been heavy snows all over the state, and while the temperature is not low for this season of the year, it is much colder than so far this winter. Generally, the smaller towns have very small stocks of coal, and have refrained from buying, hoping for a further decline in prices. It is a well known fact that a condition of this kind is always followed by a demand for coal as soon as stocks are exhausted, and this demand results in a shortage, consequently an advance in prices.

The larger cities are better supplied with coal than the smaller towns, due to small producers consigning to jobbers who were forced to dispose of it. These consignments were, without exception, made to the larger cities. Even these people are being cleaned up fast, and without doubt we will see a heavy demand for coal within the next six weeks.

Kansas lump and nut is \$6; slack \$4 and mill \$4.25. Arkansas lump is \$6.75; slack \$3.50@4; Missouri lump \$5.50; washed slack \$4.05.

South

BIRMINGHAM

Trade Devoid of Activity Except for Domestic—Some Contract Renewals—Mines Curtail Output to Await a Market.

There has been no noticeable improvement in the inquiry for steam coal here, buying being represented by orders here and there for a few cars to meet current needs only. Some contracts are being renewed, but most of the agreements have from two to five months yet to run. A small tonnage of Mt. Carmel, Brookwood and Pratt mine run has been disposed of to the spot trade at \$3.50 mines. Some Pratt and Big Seam contracts have been renewed at \$3.75 and \$3 respectively for mine run, while Black Creek and Cahaba renewals are said to be around \$4.50 for mine run and \$5 for prepared.

Demand for domestic has been a little stiffer, due to several days of cold weather and the absence of any stocks on the yards of retailers. The class of householders who await the arrival of cold weather to provide their fuel have drawn heavily on the retail yards.

Production, while being curtailed to some extent, is still on practically a normal basis. However, numbers of the smaller commercial operations, which depend almost entirely on spot trade requirements for disposition of their output, are running on short time. The movement of coal against contracts is being held down to minimum quotas in many cases, and this will also serve to reduce output at operations where such agreements are held.

LOUISVILLE

Distress Coal Injures Spot Market—Domestic Demand Improves Slightly—Some Resumption of Manufacturing Bolsters the Trade.

A good deal of very cheap mine run and screenings is being offered at the present time, some excellent grades of eastern Kentucky and West Virginia screenings have been offered at \$2 and under, some distress shipments going at \$1.75. West Virginia is weaker on screenings than eastern Kentucky, but freight rates offset the lower prices quoted. Jobbers are complaining that operators have been offering coal so cheaply and there has been so much distress fuel on the market, that it has been almost impossible to secure a fair volume of business, or a price high enough to allow a fair commission.

Rather than shut down, some operators have been consigning coal unsold, resulting in any kind of price being taken to avoid demurrage. This condition has made for some very cheap mine run, selling at a screenings price. Lump coal has generally been disposed of without loss.

Retailers report a slight improve-

ment in demand, but orders continue for very small quantities only. Lower prices are attracting a little business, but rumors of still lower prices are also holding back some buyers.

Industrially things are opening up slightly, and a number of manufacturing plants which have been down are operating in a limited way. Rumors

of resumption by several of the automobile manufacturers are giving more confidence to the trade.

Mine quotations show:

	Prepared	Mine Run
Harlan.....	\$4.75@ \$5.25	\$3.25
Hasard.....	4.50@ 5.00	2.75
Elkhorn.....	4.50@ 5.25	3 @ 3.25
Jellico.....	5.00@ 5.25	3.25
Straight Creek.....	5.00	3.25

News

From the Coal Fields

Northern Appalachian

CONNELLSVILLE

Spot Market Stagnant—No Interest in Contract Offers—Merchant Production Is Extremely Light.

The spot market in coke continues very quiet. There is only very occasional demand for furnace, while demand for foundry is of limited volume, carload lot consumers coming into the market at much longer intervals than usual. Merchant producers have vigorously restricted production, so that offerings are light, but even at that furnace coke is frequently sold for heating purposes to get rid of it. In the spot market furnace coke is down a trifle while foundry is down 50c.

Several operators have now made up

their minds that they are willing to sell furnace coke on contract for the half year at a flat price of \$6. Formerly they wanted a 5 to 1 ratio against basic pig iron with provision for a stiffer ratio in case pig iron should advance. To quote a flat price of \$6 is, however, no concession, since the present outlook is that pig iron will decline, and if it declines will not get back even to \$30 within the half year. Furnaces are taking no interest in contracts.

The spot market is quotable \$5@ \$5.50 for furnace and \$6.50@ \$7 for foundry, per net ton at ovens.

The *Courier* reports production in the Connelville and Lower Connelville region in the week ended Jan. 8 at 175,350 tons, an increase of 10,365 tons. Furnace oven production increased 11,875 tons to 146,050 tons, while merchant oven production decreased 1,510 tons to 29,300 tons.

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY
(NET TONS)

BITUMINOUS COAL

Total bituminous, including coal coked

	Production	Average per Working Day
Annual production:		
1917 (calendar year).....	551,790,000	1,794,000
1918 (calendar year).....	579,386,000	1,880,000
1919 (calendar year).....	458,063,000	1,485,000
1920 (calendar year).....	556,563,000 (a)	1,805,000
Weekly production:		
New Year's week ('):.....		
Ended January 5, 1918.....	9,312,000	1,757,000
Ended January 4, 1919.....	8,459,000	1,596,000
Ended January 3, 1920.....	11,062,000	2,087,000
Ended January 1, 1921 (a).....	9,615,000	1,814,000
Week after New Year's:		
Ended January 12, 1918.....	10,032,000	1,672,000
Ended January 11, 1919.....	10,361,000	1,727,000
Ended January 10, 1920.....	11,323,000	1,887,000
Ended January 8, 1921 (c).....	11,083,000 (a)	1,847,000

(a) Revised from last report. (') Counting New Year's Day in 1918, 1919, and 1920, as equivalent to 0.3 of a working day; in 1921, to 0.17 of a working day. (c) Subject to revision.

ANTHRACITE

	1921	1920
	Week	Week
Dec. 25 (b).....	1,626,000	1,356,000
Jan. 1 (c).....	1,582,000	1,512,000
Jan. 8.....	1,793,000	1,846,000
	Coal Year to Date	Coal Year to Date (a)
	66,544,000	68,708,000
	68,126,000	70,220,000
	69,919,000	72,066,000

(a) Less two days' production during first week of April, to equalize number of working days covered for the two years. (b) Five-day week.

BEEHIVE COKE

United States Total

	Week Ended	
Jan. 8 (a)	Jan. 1 (b)	Jan. 10
1921	1921	1920
272,000	278,000	427,000

(a) Subject to revision. (b) Revised from last report.

PITTSBURGH

Production Maintained Fairly Well—Spot Demand Insufficient to Make Regular Market—Best Grades Gas Command Good Prices.

Production is maintained better than in some nearby districts, there being a steady but only slight decline. Prices are very irregular, since there is not enough demand to establish a regular market, and occasional lots that are forced on the market to avoid demurrage have to be sacrificed at less than cost of production. There is some business going at prices that would not show a loss if the mines were operating full, although with light operation there might be a loss on account of poor distribution of overhead. All sales at less than \$2.50 are regarded as distinctly sacrifice sales, and are not regarded as making a real market price.

Mines having regular contracts are making fair shipments and can maintain a moderately good rate of operation without selling in the spot market. This condition is particularly to be noted in the case of gas coal. There is little if any good grade gas coal being forced on the market, the result being that the best grades command good prices, and up to \$4 for screened.

Railroad officials state that a car shortage is probable in the height of the Lake season, and counsel a start in March as the only feasible means of mitigating the situation. Whether market prices can be developed by March 15 is a question, but as in some previous seasons coal could be moved subject to price adjustment later.

The spot market is quotable at about \$2.50 for steam mine run, \$3@3.50 for gas and byproduct mine run, and \$3.50 @ \$4 for best grades of screened gas, per net ton at mine.

UNIONTOWN

Both Coal and Coke Markets Are Inactive—Downward Revision of Wage Scale Is Anticipated.

The spot coal market entirely disappeared this week. Virtually no coal is moving from this territory, with the exception of contract deliveries. As a result, mines of the smaller class which had been disposing of their output through local jobbers have suspended operations. Jobbers themselves have been able only with much difficulty to dispose of tonnage under contract.

Only sufficient coke is being manufactured by merchant operators to meet contract requirements and these have been pared very sharply.

Suspension of coal and coke production has been brought about by price views of consumers. Coal is quotable at \$2 by the operators but consumers seem unwilling to pay even that figure. There is no quotable figure on spot coke for furnace purposes. Buyers are offering \$5@5.50 but operators have been unable to take these prices and there are therefore no sales. Some "distress" tonnage is being sold at those figures but it is a case of the operator

being willing to sacrifice price to get it off his hands.

The crux of the local situation, is the present wage scale and well-informed operators believe it will be some time yet before a general readjustment downward is even commenced. That view is taken because of the action of the H. C. Frick Coke Co. in increasing production during the present period. Operators hold that if the Frick interests intended to reduce wages they would not continue capacity operations now at the present high scale. The Frick company for many years has set the wage scale in this territory.

CENTRAL PENNSYLVANIA

Demand Is Unimproved—Prices Steady, Apparently at Bottom—No Market Losses Grow.

Demand for coal in the central Pennsylvania field for the second week of January was materially lessened by reason of no demand from the big industrial plants in sections of the Eastern market and the lack of demand for Tidewater coal. Mines in operation during the week all had contracts and there was but little coal sold except for domestic purposes.

The low prices of the opening of the year prevail and retail prices for domestic coal have dropped to \$6@7 per ton, the price delivered being generally around \$6.50. Railroads reaching the field are able to furnish all the cars demanded and make prompt delivery. Fully half the mines in the district are idle or running on exceedingly short time. No market losses are mounting steadily, although a generally optimistic view of the future is held by the trade.

EASTERN OHIO

Prices Touching Bottom—Production Well Maintained—Railroads Take Heavy Tonnage—Demand Is Unimproved.

Car shortage as a factor limiting production has disappeared. Open-top cars, available on all railroads, during the week ended Jan. 8, exceeded requirements of the mines. Owing to "no market" conditions which have developed and consequent spot sales in many instances at prices approximating bottom, operators are apprehensive and more mines are closing down on account of no orders.

Prospects of early revival in demand are not encouraging. With restricted activity in manufacturing plants generally and steel mills running about 25 per cent of normal, the trade is at a standstill.

Production for the week ended Jan. 8 at approximately 170 mines amounted to 401,000 tons or 62 per cent of a weekly potential capacity of 643,000 tons. However, it is reported that mines in the Pittsburgh Vein Operators Association averaged about 75 per cent of full-week operating time. At the present volume of output it is understood that railroads are taking around 50 per cent of production.

Continued moderate temperature has resulted in retailers having a slow turn-over. Retailers state they are receiving unusually quick deliveries from the mines, railroad performance being the most expeditious experienced in many months. The bunching of arrivals on track has resulted in demurrage, notwithstanding the fact that free-time allowed for unloading was extended from 24 to 48 hours about the middle of December.

Under present market conditions there has been some recession in prices, the range being: slack \$2@2.75; mine run \$2.50@3; 1 in. lump \$3@3.25; 1 1/2 in. lump \$3.50@4; domestic lump \$3.75@4.50.

FAIRMONT

Inactive Spot Market Continues—Prices Touch Bottom—Some Contract Inquiry—"No Market" Idleness Growing.

Idleness at northern West Virginia mines grew during the week ended Jan. 8, there being fully 200 mines out of operation at the close of that period, 123 of such being on the Monongah Division of the B. & O. There was little or no spot demand and to continue operations simply meant piling up dead loads. Notwithstanding the sluggish spot market considerable coal moved on contract to Eastern points. Western shipments were far less in volume.

Owing to inactivity in spot buying, quotations are difficult to give, but the general range on mine run was \$2 @ \$2.25. The fact that some buyers were making contract overtures indicated that the price-bottom of the market has been reached. The car supply was above par. Considering general condition, unconsign loads were not large in number.

Middle Appalachian**HIGH-VOLATILE FIELDS**

"No-Market" Losses Are Heavy—Spot Call Is Unimproved—Production Declines Steadily.

KANAWHA

Loadings were light throughout the first week in 1921, growing smaller from day to day. Lack of business was responsible for the lowered output, practically the entire production going on contract.

Loads were beginning to accumulate, particularly on the Coal River. There were few takers of steam coal at quotations of \$2.75. Gas coal at \$4 moved better. Prepared sizes were a drag. There was a surplus of cars at all times during the weekly period.

LOGAN AND THACKER

Car supply was far in excess of Logan requirements throughout the week, the daily output being almost wholly restricted to contracts. Spot business was lacking at any acceptable prices. Mine run offers from buyers ranged

\$2.50@2.75, with gas about \$4. Contract shipments were scaled down through cancellations and suspensions.

As a rule, more coal was being produced in the Williamson field than in adjoining districts, with miners in excess of those on hand before the outbreak of the strike, ready to work whenever possible. Unions have been the first to close because of no markets and others are expected to follow suit. There have been several outbreaks of the strikers, but the military authorities appear to have the situation well under control.

NORTHEASTERN KENTUCKY

No market losses during the week ended Jan. 8 amounted to 127,765 tons, or 51 per cent of potential capacity. The supply of empties was so plentiful that many cars were left over at the close of each day. Spot business was at a standstill, distribution being confined to contract customers.

Lump ranged \$4.50@5.50, mine run \$3@3.25 and slack soft, \$1.75@2.25.

VIRGINIA

As a result of the falling market production was reduced to about 65 per cent of potential capacity. Spot demand was almost completely eliminated and operations were only kept going by shipments on contracts. Many mines without these agreements have been forced to close down until the demand becomes more lively.

LOW-VOLATILE FIELDS

Contract Shipments Holding Well—Prices Steadier—Western Domestic Demand Is Revived.

NEW RIVER AND THE GULF

A number of Gulf mines were still down at the close of the week ended Jan. 8, not having reopened since the holidays. Cars were plentiful but orders few. Business was limited to contract shipments. However, production was larger than during the final week of 1920. Prices underwent little change, remaining quotable \$4.50@5, with few sales made. All mine sidings were crowded with empties.

New River production recovered slightly. Aside from contract orders there was nothing to keep mines going. Some renewal of domestic demand was observed from Western markets. Mine run remained steady at \$5.

POCAHONTAS AND TUG RIVER

Production in the Tug River field reached 105,400 net tons during the first week in 1921. Producers feel that with mine run at \$5 the bottom has been reached. The view is strengthened by scattered indications of a resumption of manufacturing. Cars and labor are plentiful. Much contract coal was being moved and a growing Western demand for domestic helped production.

Pocahontas mines had rather a good week, despite inactivity in the spot market.

Contract orders held well. Cars were

plentiful throughout the week. An encouraging sign was the increasing demand for slack. Prices appeared somewhat steadier, mine run unchanged at \$5.

Middle Western

WESTERN KENTUCKY

Distress Coal Is Forcing Lower Prices—Better Conditions Anticipated.

Western Kentucky is standing the present slump nicely, and while coal is selling at very nearly production cost the situation is much better than it was in years gone by, when big slumps caught the trade with limited markets in which to dispose of production. This field has new markets, created through better tariffs and hard work in convincing consumers and dealers. Demand for all grades is light with domestic as usual one of the best sellers.

Quotations during the past few days show lump quoted \$3.75@4; mine run, \$2@2.50; nut and slack, \$1.75@2; screenings, \$1.50@1.75. Reports show averages for the field for prepared sizes \$3.45 on a range of \$3@4; mine run, \$2.85 on a range of \$2.60@3.25; nut and slack, \$2.80; range, \$2.50@3.25.

Operators are merely playing a safe game and not overproducing, although some have loaded coal without orders, and were forced to dispose of it at low prices. There have been some cancellations also, as some industrial buyers have looked through their joke books for good excuses to get out of contracts, arguing anything from off grade, to size of car shipped.

DUQUOIN

"No Markets" Close Mines—Prices Range Lower—Railroad Buying Curtailed.

Market conditions are at a low ebb and tonnage being loaded is greatly reduced in volume. In domestic grades only is there anything like a demand. Mines in many districts have closed down, some entirely and others two or more days a week on account of "no market" conditions.

Prices range still lower, screenings \$1.90@2.75, lump \$4.25@5 and mine run \$3@3.75. Railroads which had been buying actively are now out of the market entirely.

INDIANA

"No Bills" Accumulate—All Demands Slump—Domestic Market Is Firm.

The coal market in Indiana is slumping. Each day several mines in Indiana fields, including District 11, are idle because they have no market for the coal which has been produced the day previous. Side tracks at all of the mines are filled with loaded cars.

Mines which had limited their production to the demand from the manufacturers with which they had contracts have been compelled to continue mining as long as possible to abide by

these contracts. Domestic use is not nearly great enough to take all the coal which has been produced and is now standing on track.

Coal prices will not be reduced by the unusual slump, according to all indications. It is probable that the wholesale value will decrease a little over one dollar. But it is doubtful if the retail markets will be cut because of the decrease. Many mining concerns declare that the costs can not be reduced as the original costs are too high to allow a sufficient profit.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Steam Prices at Bottom—Open Weather Cuts Domestic Demands—Wages Are Cut.

Demand continues to decline. Steam prices have apparently reached bottom but domestic and gas coals continue to soften. Quotations find few buyers. Best gas mine run is now bought at \$3, domestic sizes \$4@5.

Open weather makes ideal traffic conditions but has killed the domestic market. The car supply is perfect for such mines that continue to operate. All high-scaled mines have reduced wages to the union figures. Some grumbling has been observed but the majority of the men have accepted the cut in a stoical manner.

Western

UTAH

Market Is Quiet—Prices Are Firm—Mild Weather Reduces Demand.

The coal business is very quiet, partly due to the return of mild weather. Many mines are operating only 50 per cent of capacity because of the poor market conditions.

Prices remain firm, despite the low demand. The Coast trade is also very poor just now. Some producers are crowding dealers with coal, but the majority of retailers are not actively in the market, reflecting the low rate of consumption by householders.

Coming Meetings

American Institute of Mining and Metallurgical Engineers' annual meeting will be held in New York, Feb. 14 to 17, 1921. Secretary, Bradley Stoughton, 29 West 39th St., New York City.

Northwest Mining Congress will hold its annual convention Feb. 28 to March 5, 1921.

Northern West Virginia Coal Operators' Association will hold its annual meeting Feb. 8, 1921. Secretary, H. S. Rogers, Fairmont, W. Va.

Pittsburgh Vein Operators' Association of Ohio will hold its annual meeting, Feb. 14, 1921, at Cleveland, Ohio. Secretary, D. F. Hurd, 415 Marion Building, Cleveland.

Canadian Institute of Mining and Metallurgy will hold its annual meeting March 2, 3 and 4, 1921, at Ottawa, Ontario, Canada. Secretary-Treasurer, G. C. Mackenzie, Montreal, Quebec, Canada.